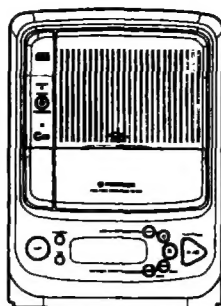


# Service Manual

**PIONEER**  
The Art of Entertainment



ORDER NO.  
RRV 1 6 6 7

FILE-TYPE CD PLAYER

# PD-F25

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	PD-F25		
KU	O	AC120V	

## CONTENTS

1. SAFETY INFORMATION .....	2
2. EXPLODED VIEWS, PACKING AND PARTS LIST .....	3
3. SCHEMATIC AND PCB CONNECTION DIAGRAMS .	12
4. PCB PARTS LIST .....	23
5. ADJUSTMENTS .....	25
6. FL INFORMATION .....	30
7. IC INFORMATION .....	31
8. OPERATIONAL DESCRIPTION .....	33
9. NEW FUNCTIONS .....	35
10. BLOCK DIAGRAM .....	36
11. DISASSEMBLY .....	37
12. PANEL FACILITIES .....	38
13. SPECIFICATIONS .....	38

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# 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

## WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

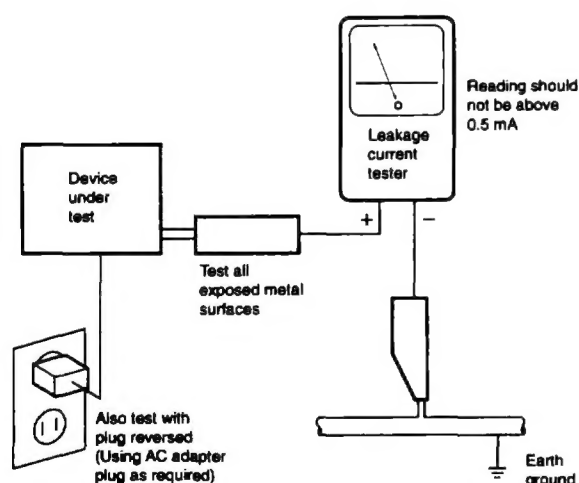
## (FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

#### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a i on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

## 2. EXPLODED VIEWS, PACKING AND PARTS LIST

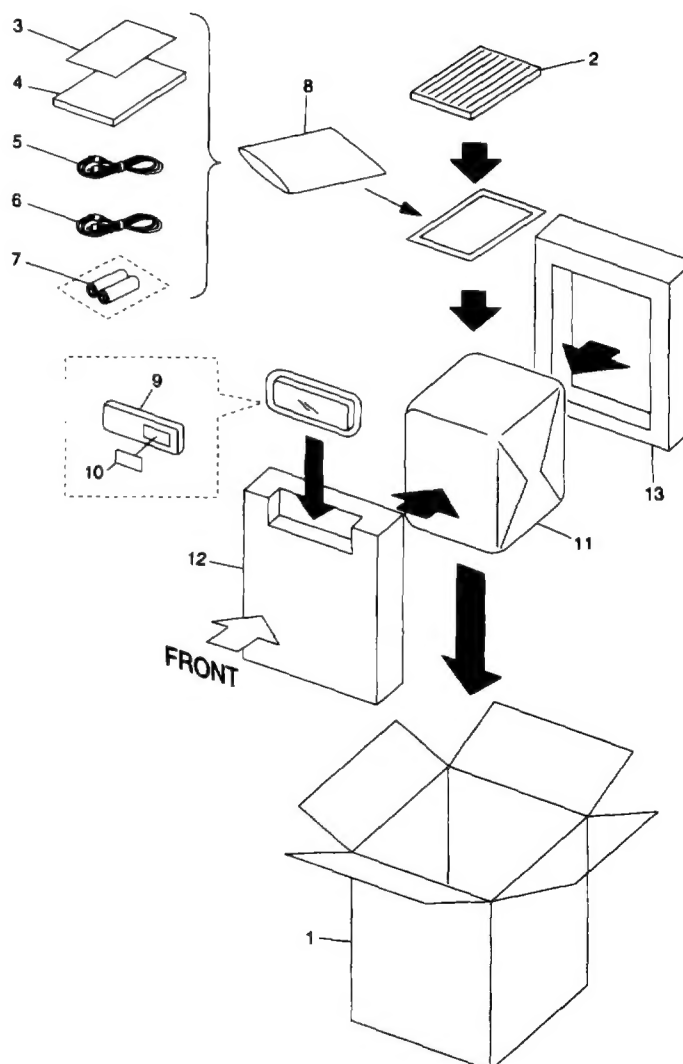
### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

### 2.1 PACKING


#### Parts List

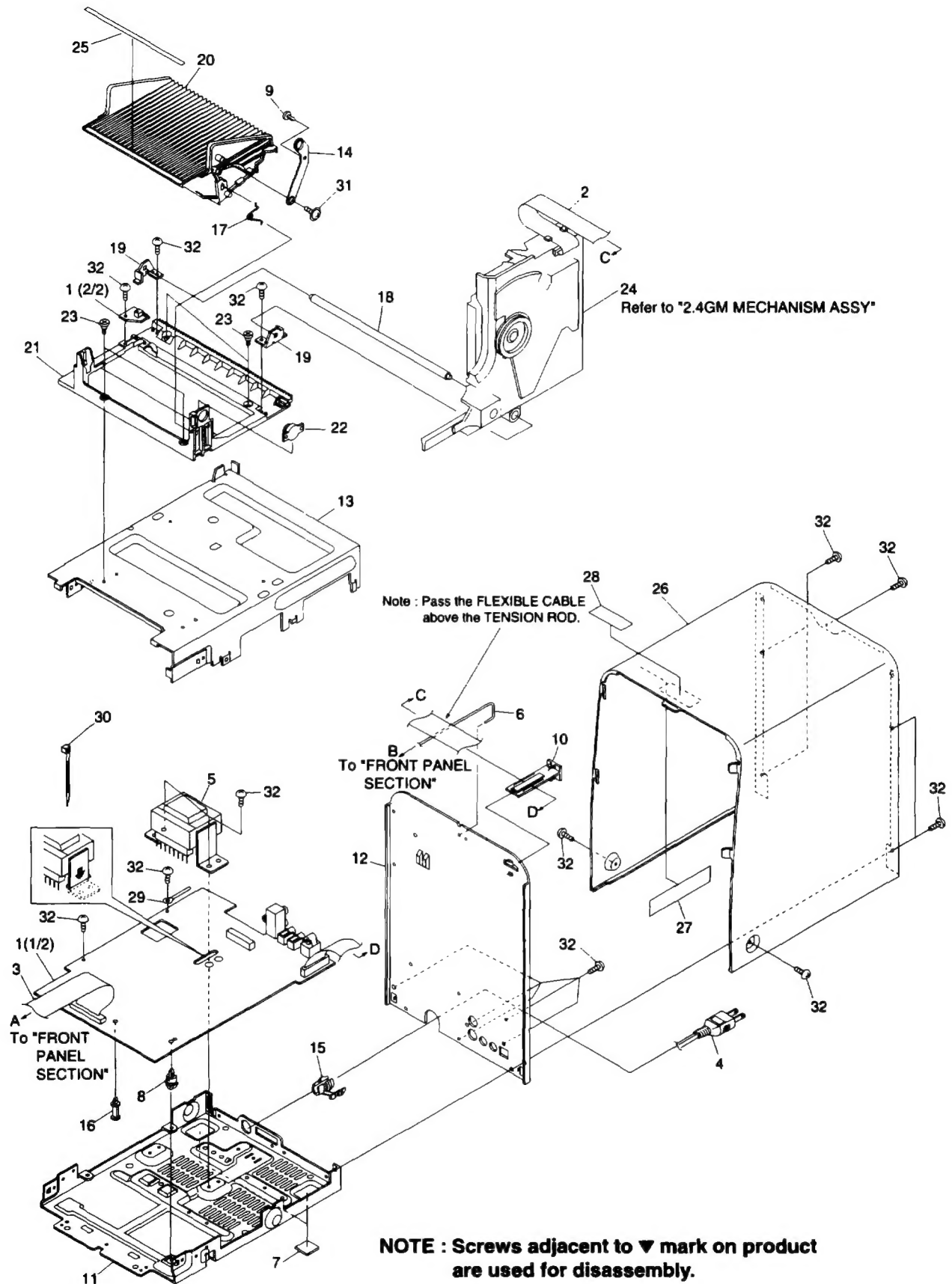
Mark	No.	Description	Parts No.
	1	Packing Case	AHD7335
	2	CD Case Rack	AMR7066
NSP	3	Warranty Card	ARY1044
	4	Operating Instructions (English)	ARB7087
	5	Cord with Mini Plug	PDE1247
	6	Cord with Plug	PDE1248
NSP	7	Battery (R6P, AA)	VEM - 013
NSP	8	Poly. Bag	Z21 - 019
	9	Remote Control Unit (CU - PD079)	AXD7072
	10	Battery Cover	AZA7148
	11	Mirror Mat Sheet (800X900X0.5)	Z23 - 020
	12	Pad F	AHA7078
	13	Pad R	AHA7079



## 2.2 EXTERIOR

### Parts List

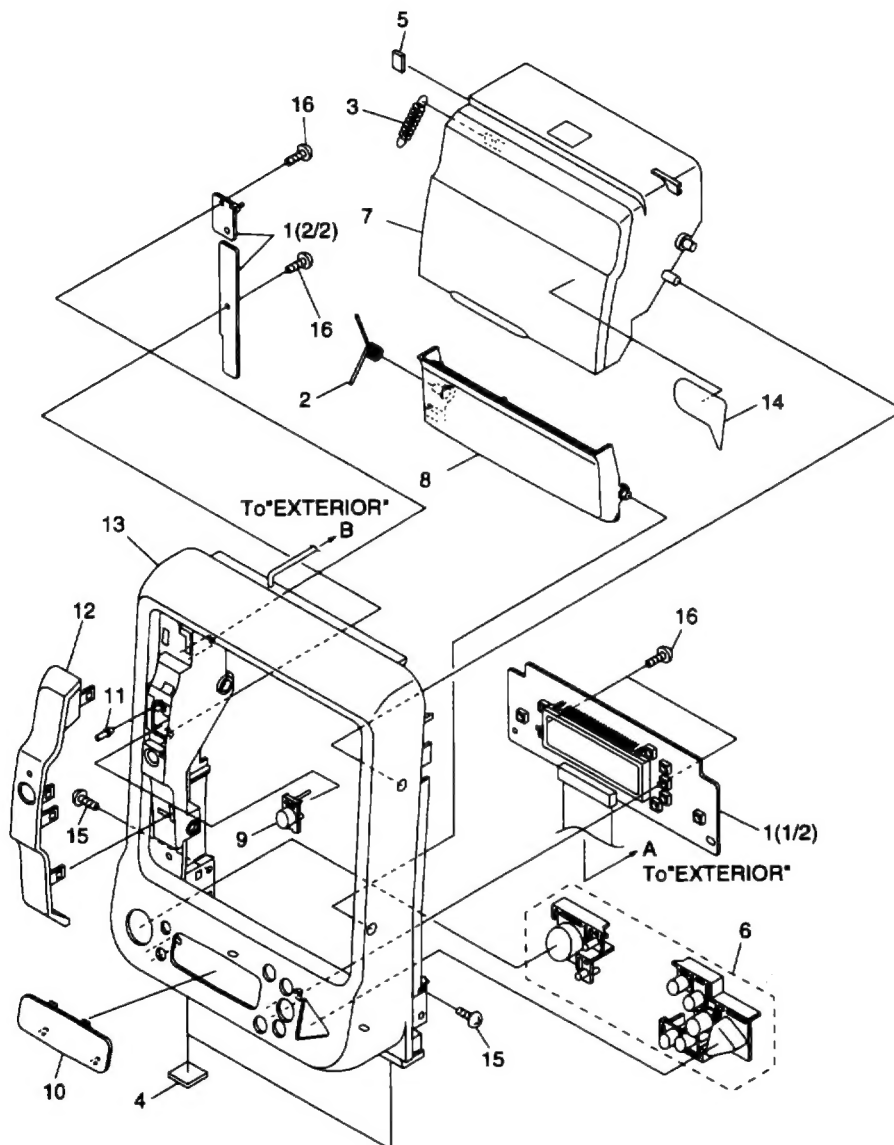
Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	CD ASSY	AWZ8019		21	Rack Base S	ANW7070
	2	Flexible Cable 22P	ADD7013		22	Damper ASSY	AXA7018
	3	Flexible Cable 29P	ADD7028		23	Screw	PBA1085
	4	AC Power Cord	PDG1015	NSP	24	GM Mechanism	AXA7045
	5	Power Transformer	PTT1237		25	Disc Rack Panel	AAK7251
	6	Tension Rod	ABH7105		26	Bonnet	ANE7082
	7	Rubber Sheet	AEB1111	NSP	27	65 Label	ORW1069
NSP	8	PCB Holder	AEC - 785		28	Caution Label	ARW7013
NSP	9	Card Spacer	AEC7053		29	Cord Clamper	RNH - 184
	10	Flexible Guide	AMR7050		30	Binder	ZCA - SKB90BK
	11	Chassis	ANA7027		31	Screw	IBZ30P080FMC
	12	Rear Panel GM	ANC7452		32	Screw	BBZ30P080FZK
	13	Sub Chassis	AND7004				
	14	Link	ANG7045				
	15	Cord Stopper	CM - 22C				
NSP	16	Card Spacer	REC1156				
	17	Rack Spring	ABH7057				
	18	Guide Shaft 25	ALA7007				
	19	Shaft Holder	ANB7021				
	20	Disc Rack	ANW7069				



## 2.3 FRONT PANEL SECTION

### Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	FRNT ASSY	AWZ8025		11	Standby Lens	AAK7182
	2	Door Spring	ABH7065		12	Sub Panel	AAK7205
	3	Hood Spring	ABH7066		13	Front Panel GM	AMB7271
	4	Rubber Sheet	AEB1111	NSP	14	Getter Label	AAX7289
	5	Rubber Sheet	AEB7044		15	Screw	BBZ30P080FZK
	6	Knob GM	AAD7211		16	Screw	BPZ30P080FMC
	7	Hood	AAK7179				
	8	Door	AAK7196				
	9	Power Knob GM	AAD7212				
	10	FL Panel	AAK7181				

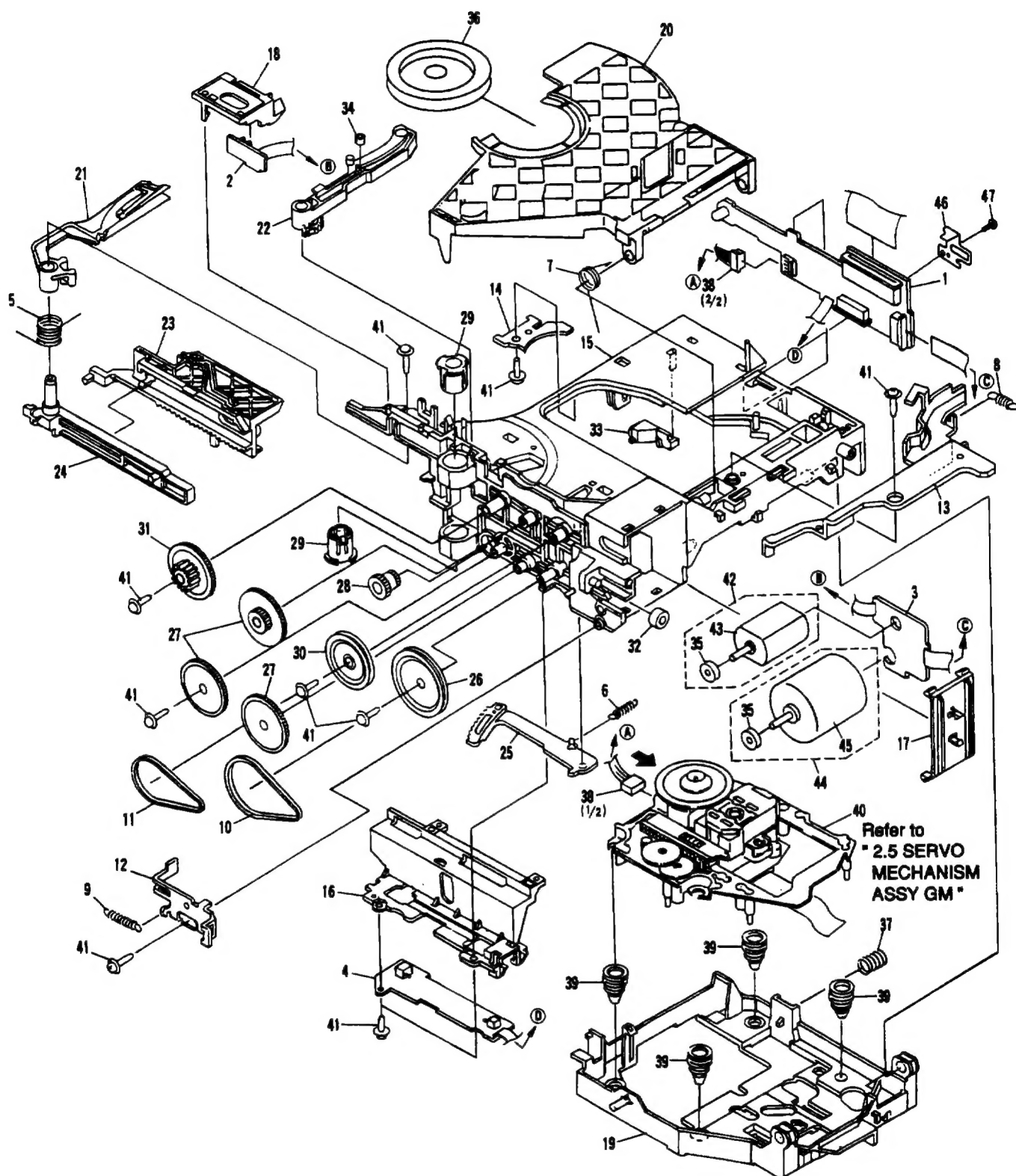


## 2.4 GM MECHANISM ASSY

### Parts List

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
NSP	1	MECHA BOARD ASSY	AWZ7835	26	Gear Pulley B	ANW7062	
NSP	2	SENSOR BOARD ASSY	AWZ7836	27	Gear A	ANW7063	
NSP	3	MOTOR BOARD ASSY	AWZ7837	28	Drive Gear	ANW7064	
NSP	4	SW BOARD ASSY	AWZ7838	29	Bearing	ANW7065	
	5	Arm A Spring 2	ABH7124	30	Gear Pulley A	ANW7066	
	6	Gear Plate Spring	ABH7051	31	Select Gear	ANW7067	
	7	Clamp Spring	ABH7107	32	Roller	ANW7068	
	8	Lock Lever Spring	ABH7120	33	LED Lens	ANW7072	
	9	Lock Angle Spring 2	ABH7123	34	Roller B	ANW7075	
	10	Loading Belt	AEB7029	35	Motor Pulley	PNW1634	
	11	Belt	AEB7030	36	Clamper	PNW2692	
NSP	12	Lock Angle	ANB7027	37	Float Spring	ABH7049	
NSP	13	Lock Lever	ANB7038	38	Connector ASSY (4P)	ADE7006	
NSP	14	Servo Stopper S	ANB7047	39	Float Rubber	AEB7028	
	15	Loading Base	ANW7086	NSP 40	Servo Mechanism ASSY GM	AXA7028	
	16	Cam Cover	ANW7052	41	Screw	IPZ20P080FMC	
	17	Motor Holder	ANW7053	42	Motor ASSY (SELECT)	AEA7005	
	18	Sensor Holder	ANW7054	NSP 43	Motor	PXM1002	
	19	Froat Base	ANW7080	44	Motor ASSY (LOADING)	AEA7006	
	20	Clamper Holder	ANW7084	45	Loading Motor	VXM1034	
	21	Arm (A)	ANW7057	46	Assist Angle 2 BK	ANB7083	
	22	Arm (B)	ANW7058	47	Screw	BBZ30P080FZK	
	23	Drive Plate	ANW7059				
	24	Arm Plate	ANW7060				
	25	Gear Plate	ANW7082				
Use oil types for GM Mechanism ASSY							
FROIL							GYA1001
HANARL							GEM1016

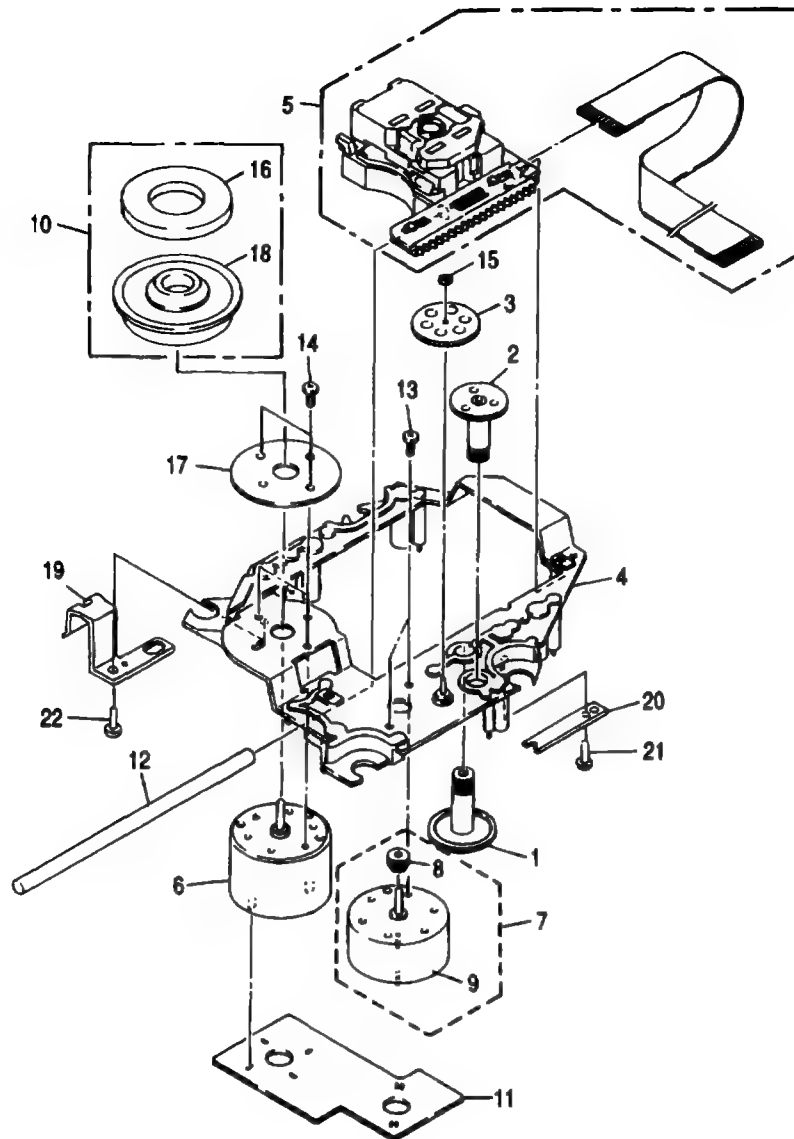




## 2.5 SERVO MECHANISM ASSY GM

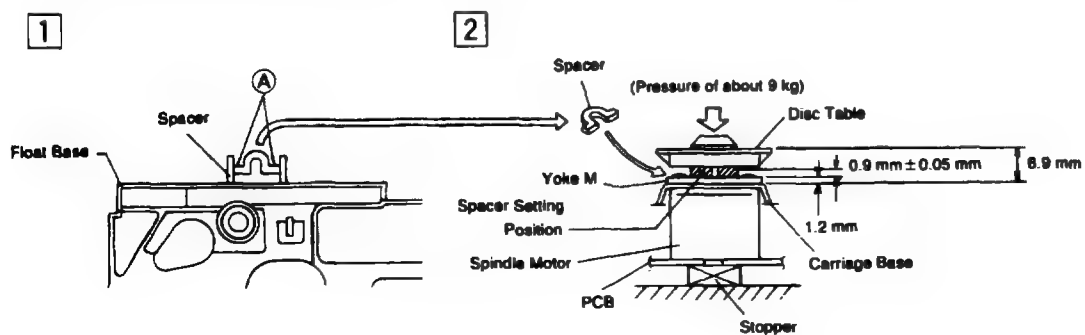
### Parts List

Mark	No.	Description	Parts No.
	1	Gear 1	PNW2052
	2	Gear 2	PNW2053
	3	Gear 3	PNW2054
	4	Carriage Base	PNW2445
	5	PICKUP ASSY	AEA7004
	6	D.C. Motor ASSY	PEA1235
	7	Carriage D.C. Motor ASSY	PEA1246
	8	Pinion Gear	PNW2055
NSP	9	Carriage D.C. Motor/0.3W	PXM1027
	10	Disc Table ASSY	PEA1314
	11	MECHA. PCB ASSY	PWX1192
	12	Guide Bar	PLA1094
	13	Screw	JFZ17P025FZK
	14	Screw	JFZ20P040FMC
	15	Washer	WT12D032D025
	16	Clamp Magnet	PMF1014
	17	Yoke M	PNB1312
NSP	18	Disc Table	PNW2410
NSP	19	Float Angle	ANB7020
	20	Gear Stopper	PNB1303
	21	Screw	BPZ20P060FMC
	22	Screw	BPZ26P100FMC



● How to install the disc table.














- 1 Use Nipper or other tool to cut the two sections marked A in figure 1.  
Then remove the Spacer.
- 2 While supporting the Spindle Motor Shaft with the stopper, put Spacer on top of the Yoke M,  
and stick the Disc Table on top (takes about 9kg pressure). Take off the Spacer.



### 3. SCHEMATIC AND PCB CONNTCTION DIAGRAMS


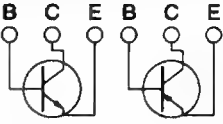

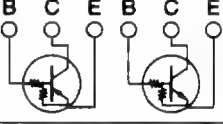

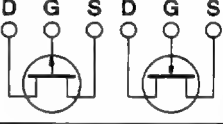

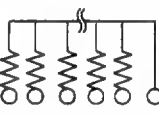

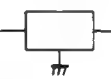
#### NOTE FOR SCHEMATIC DIAGRAMS

(Type 4A)

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**  
Unit: k: k $\Omega$ , M: M $\Omega$ , or  $\Omega$  unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F):  $\pm 1\%$ , (G):  $\pm 2\%$ , (K):  $\pm 10\%$ , (M):  $\pm 20\%$  or  $\pm 5\%$  unless otherwise noted.
- CAPACITORS:**  
Unit: p: pF or  $\mu$ F unless otherwise noted.  
Ratings: capacitor ( $\mu$ F)/voltage(V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**  
Unit: m: mH or  $\mu$ H unless otherwise noted.
- VOLTAGE AND CURRENT:**  
 or  $\leftarrow$  V:  
DC voltage (V) in PLAY mode unless otherwise noted.  
 mA or  $\leftarrow$  mA:  
DC current in PLAY mode unless otherwise noted.  
Value in ( ) is DC current in STOP mode.
- OTHERS:**
  -  or  : Adjusting point.
  -  : Measurement point.
  - The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
  - SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES** (Underline indicates switch position):  
FRNT ASSY  
 S101 : BEST  
 S102 :  (DISC)  
 S103 :  ,  (SKIP/SCAN)  
 S104 : RANDOM  
 S105 :  (DISC)  
 S106 :  ,  (SKIP/SCAN)  
 S107 : TIME  
 S108 :  (STOP)  
 S109 :  (PLAY/PAUSE)  
 S201 : POWER  
 S301 : RACK  
 CD ASSY  
 S401 : HOME  
 SW BOARD ASSY  
 S651 : CLAMP  
 S652 : EJECT  
 MECHA. PCB ASSY  
 S610 : INSIDE

#### NOTE FOR PCB DIAGRAMS

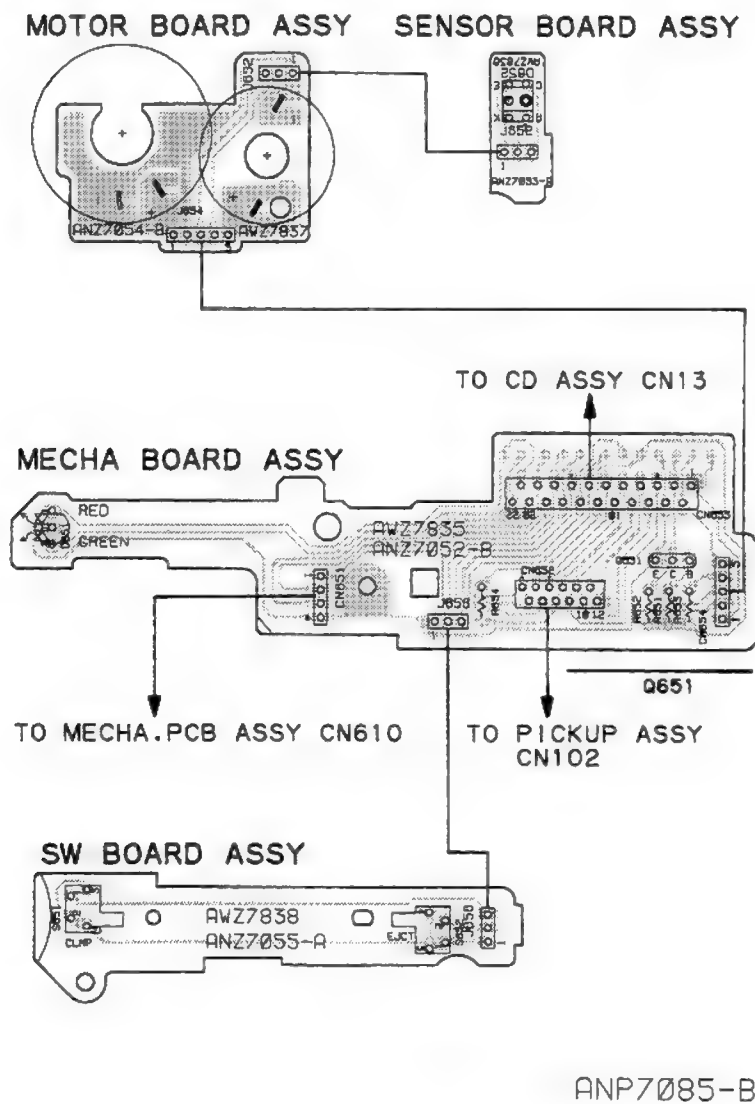
- Part numbers in PCB diagrams match those in the schematic diagrams.
- A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

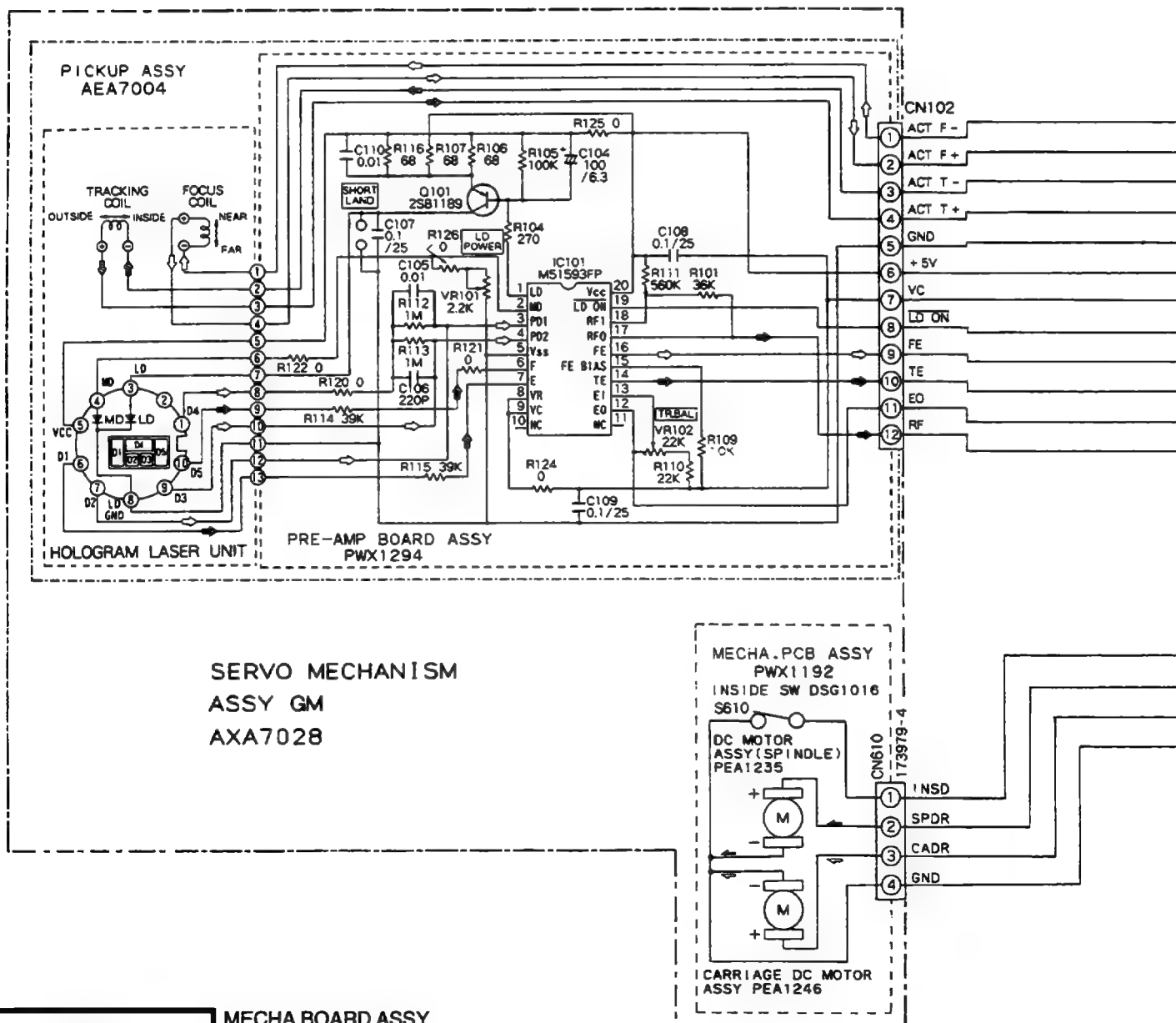
- The parts mounted on this PCB include all necessary parts for several destination.  
For further information for respective destinations, be sure to check with the schematic diagram.

### 3.1 MECHA BORAD, SENSOR BOARD, MOTOR BOARD, SW BOARD, PICKUP AND MECHA. PCB ASSEMBLIES

PCB-1



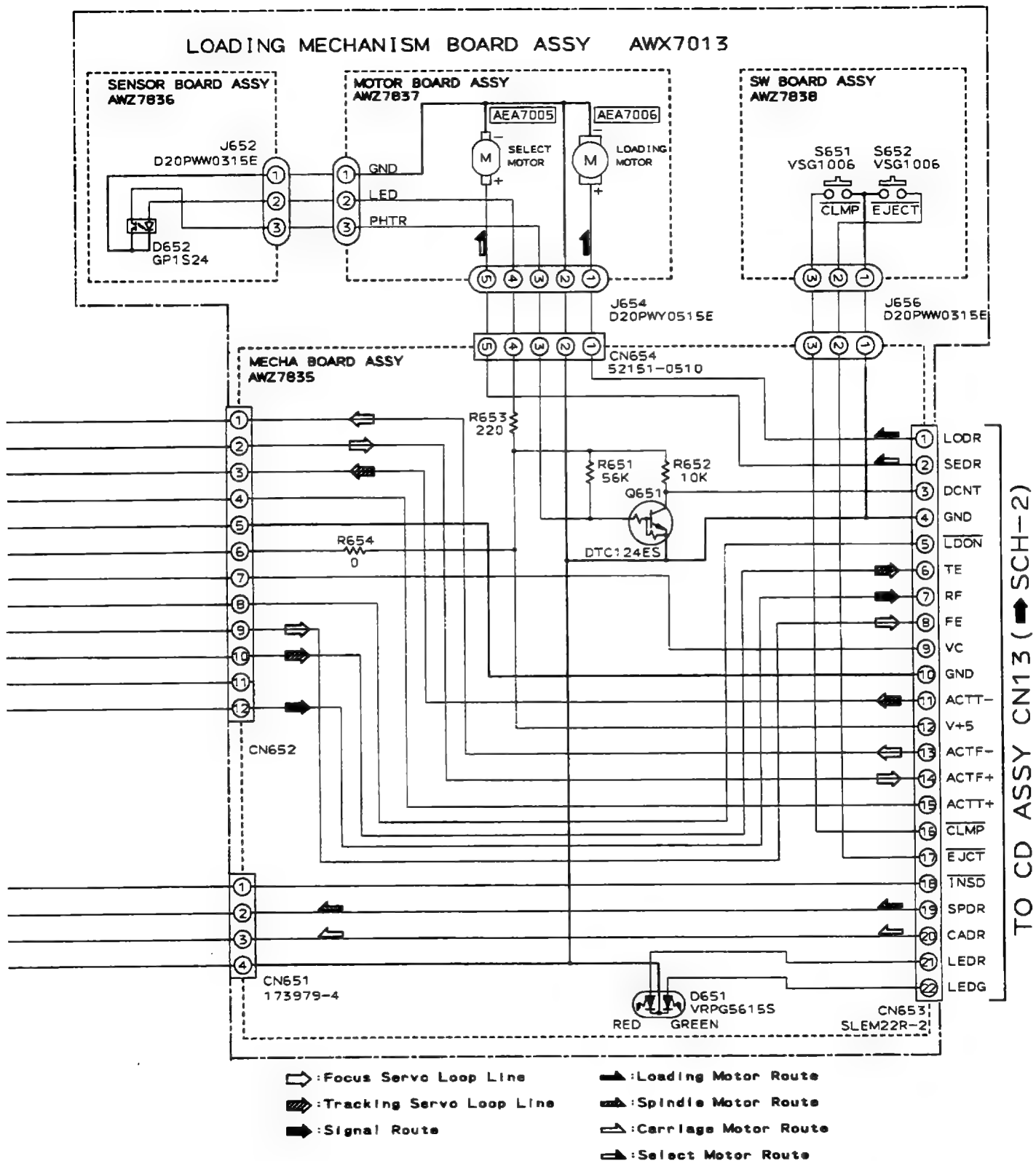
- This diagram is viewed from the mounted parts side.



**SCH-1**

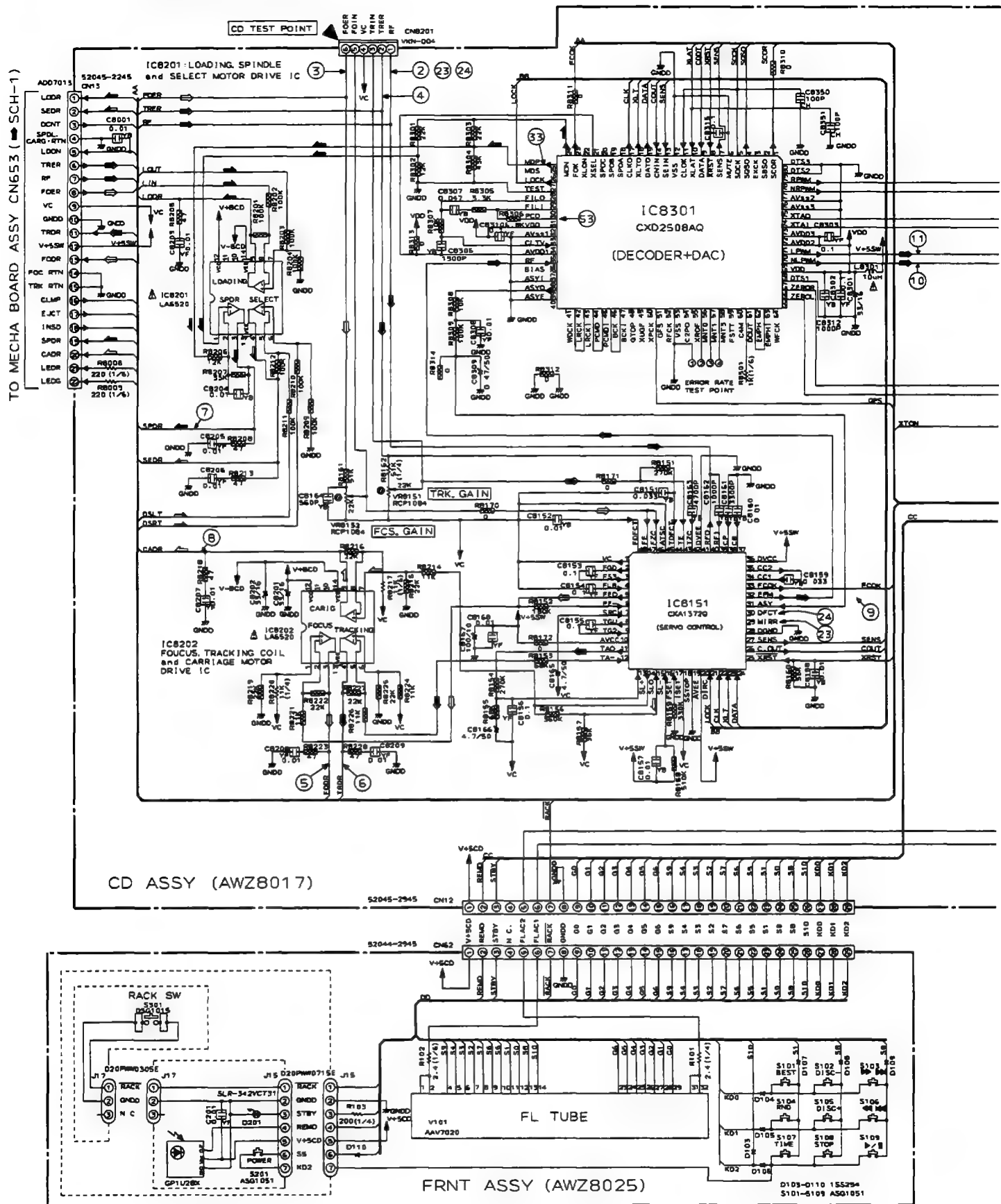
MECHA BOARD ASSY,  
SENSOR BOARD ASSY,  
MOTOR BOARD ASSY, SW BOARD ASSY,  
PICKUP ASSY, MECHA. PCB ASSY

SCH-1

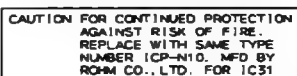


MECHA BOARD ASSY,  
SENSOR BOARD ASSY,  
MOTOR BOARD ASSY, SW BOARD ASSY,  
PICKUP ASSY, MECHA. PCB ASSY

**SCH-1**







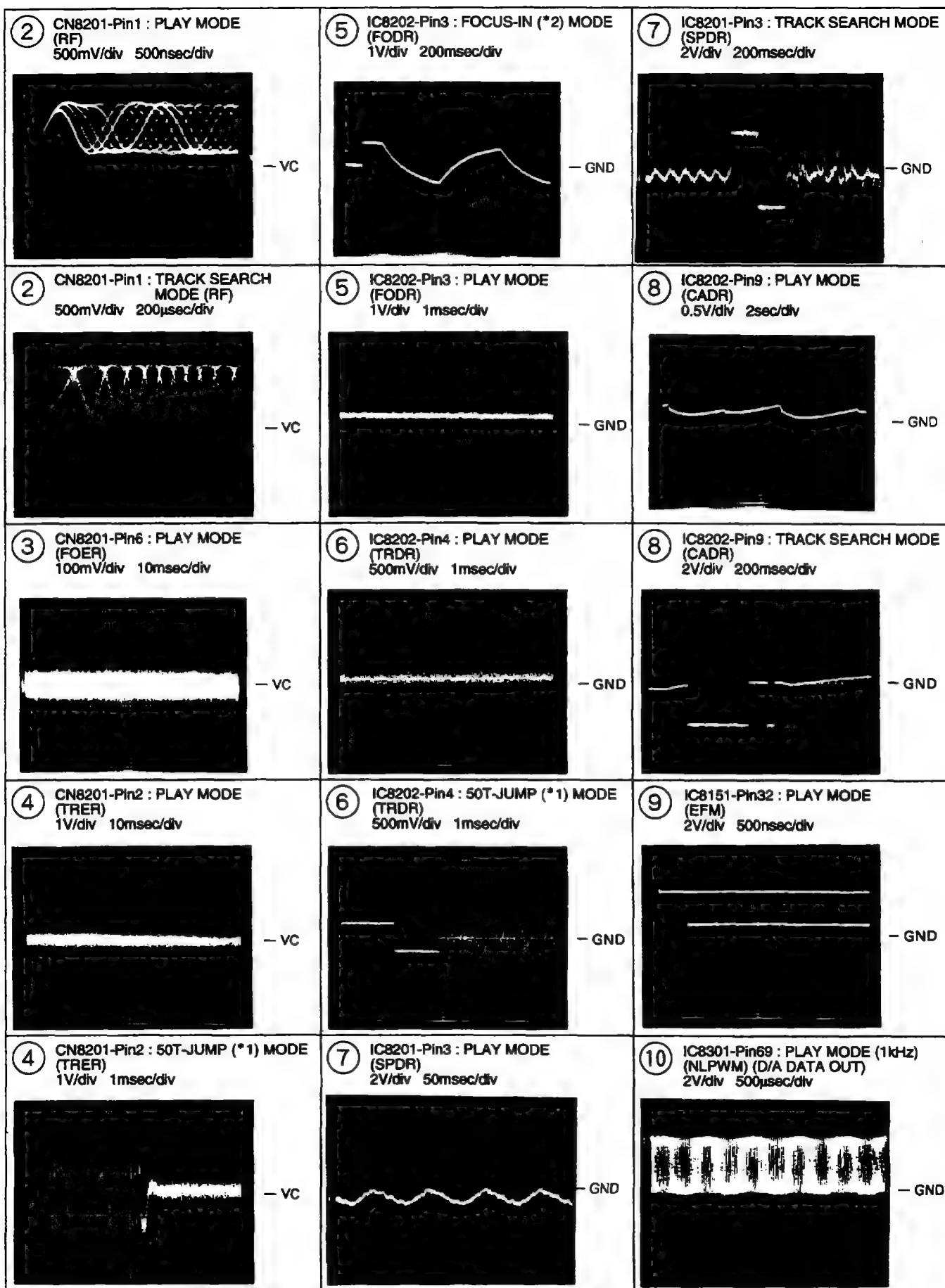
## SCH-2

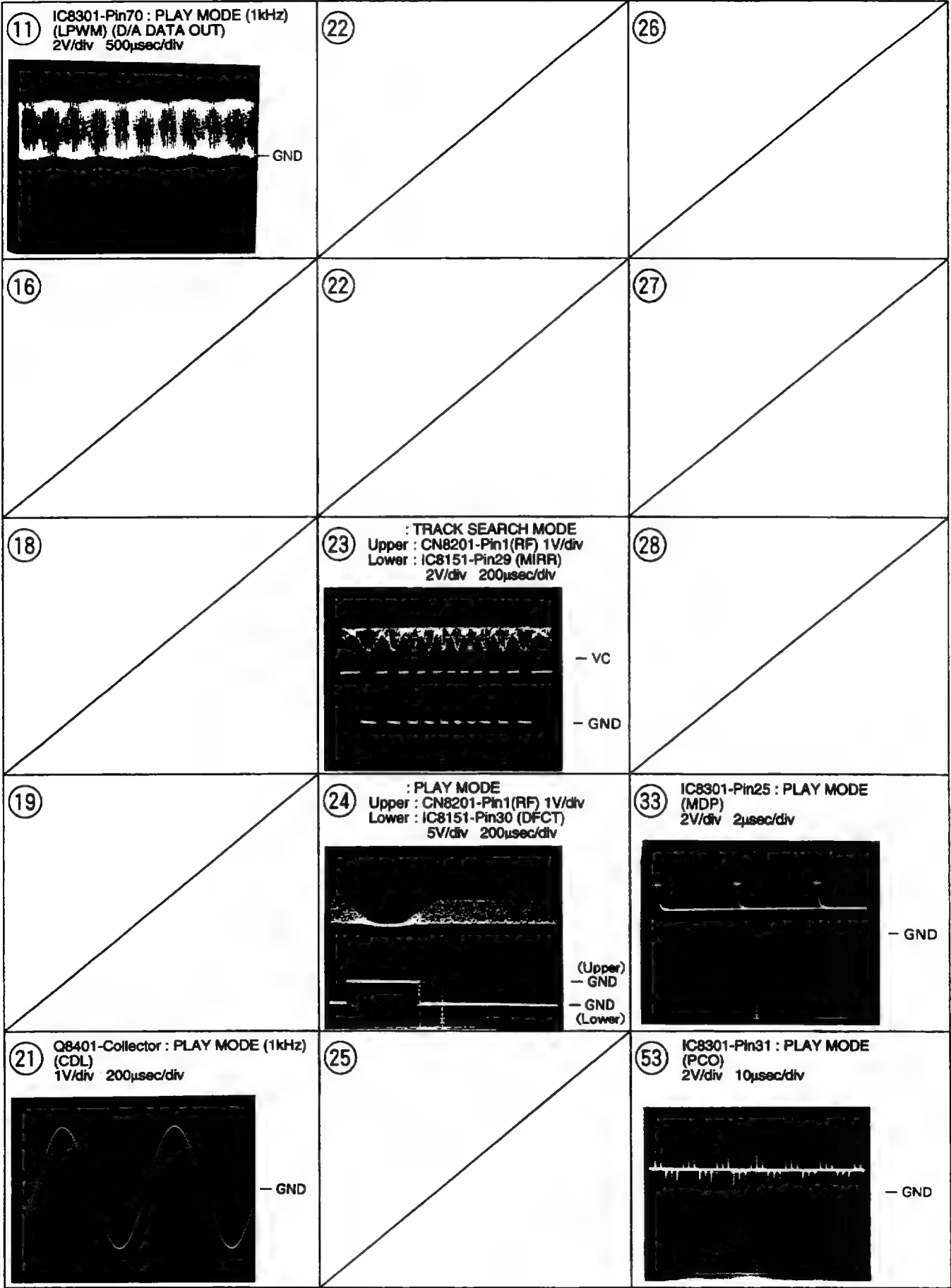
# PD-F25

## WAVEFORMS

Note : The encircled numbers denote measuring points in the schematic diagram.

- \*1 50T-JUMP : After switching to the pause mode, press the manual search key.
- \*2 FOCUS-IN : Press the key without loading a disc.





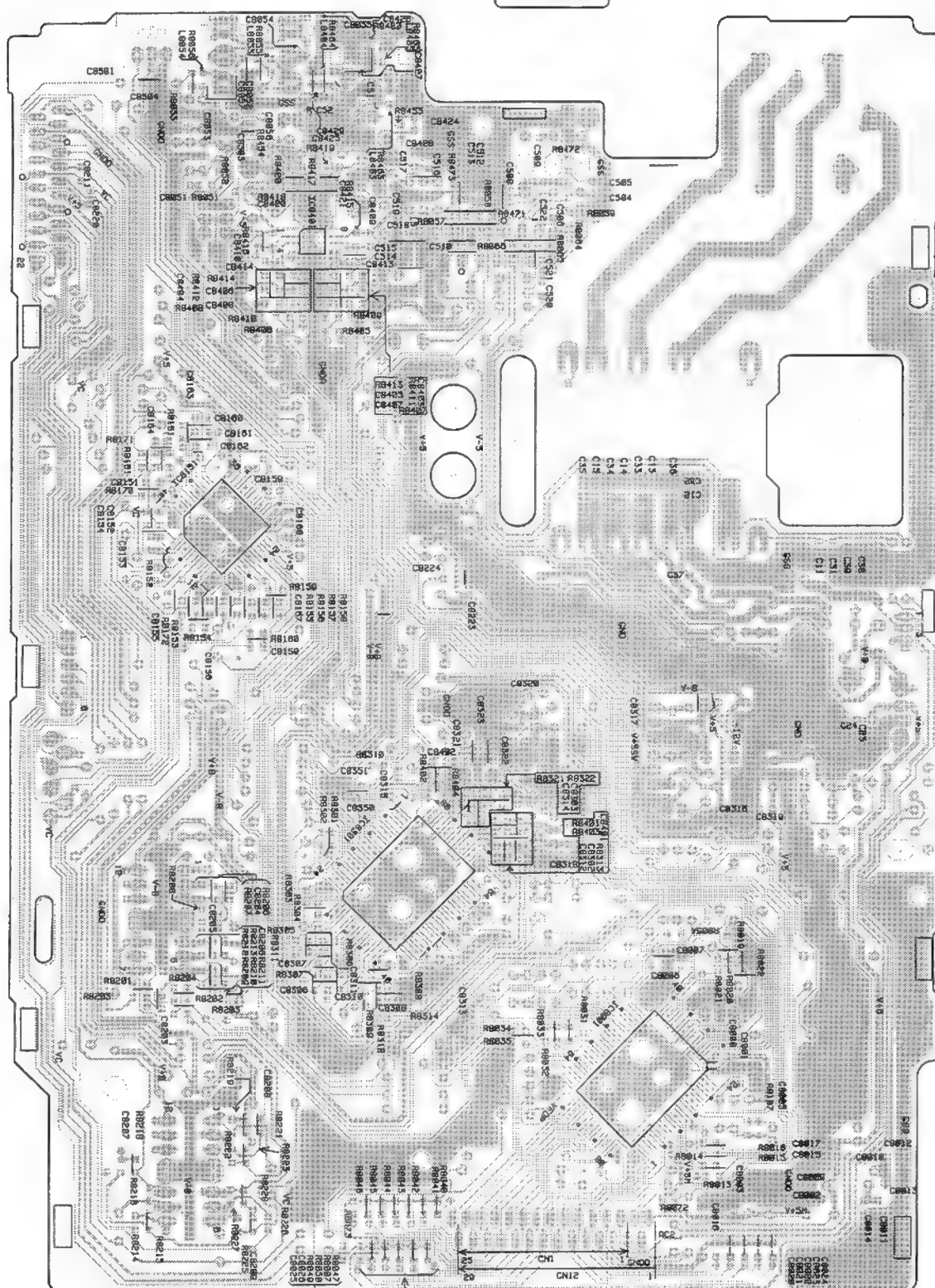
PCB-2



CD ASSY

• This diagram is viewed from the foil side.

PCB-3



IC8401

IC8151

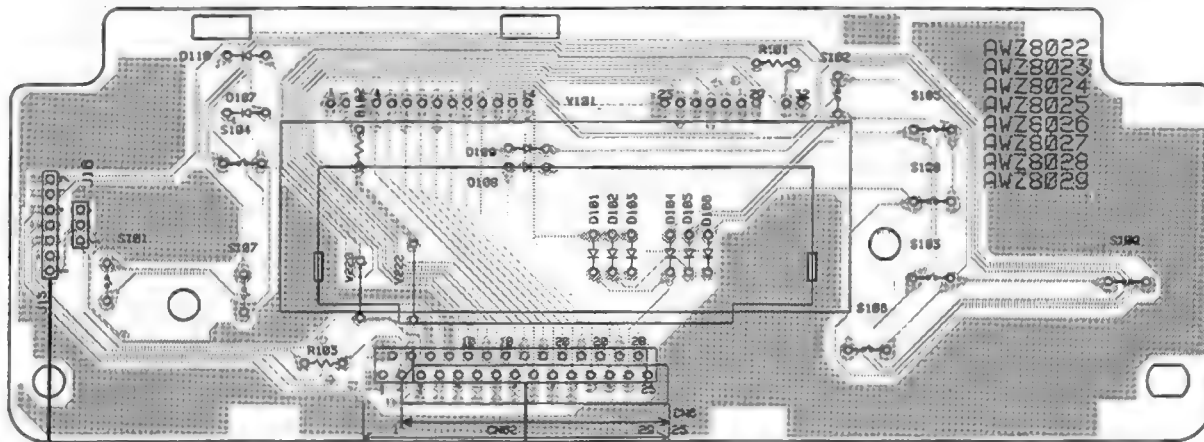
IC8301

IC8001

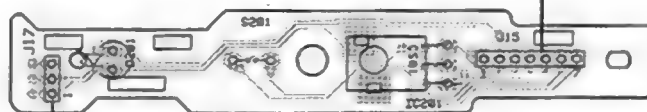
ANP7105-C

FRNT ASSY

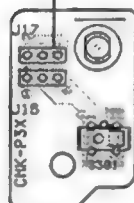
PCB-4



TO CD ASSY CN12



IC201



ANP7105-C

- This diagram is viewed from the mounted parts side.



## 4. PCB PARTS LIST

### NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560 $\Omega$	$\rightarrow$	56 $\times$ 10 <sup>1</sup>	$\rightarrow$	561	RD1/4PU	561J
47k $\Omega$	$\rightarrow$	47 $\times$ 10 <sup>3</sup>	$\rightarrow$	473	RD1/4PU	473J
0.5 $\Omega$	$\rightarrow$	0R5			RN2H0R5	K
1 $\Omega$	$\rightarrow$	1R0			RS1P1R0	K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k $\Omega$	$\rightarrow$	562 $\times$ 10 <sup>1</sup>	$\rightarrow$	5621	RN1/4PC	5621F
----------------	---------------	------------------------------	---------------	------	---------	-------

### Mark No. Description Parts No.

#### ■ LIST OF ASSEMBLIES

NSP	LOADING MECHANISM BOARD ASSY	AWX7013
NSP	└─ MECHA BOARD ASSY	AWZ7835
NSP	└─ SENSOR BOARD ASSY	AWZ7836
NSP	└─ MOTOR BOARD ASSY	AWZ7837
NSP	└─ SW BOARD ASSY	AWZ7838

NSP	MOTHER ASSY	AWM7191
	└─ CD ASSY	AWZ8017
	└─ FRNT ASSY	AWZ8025

MECHA. PCB ASSY	PWX1192
-----------------	---------

#### ■ PCB PARTS LIST

##### MECHA BOARD ASSY

##### SEMICONDUCTORS

Q651	DTC124ES
D651	VRPG5615S

##### RESISTORS

R652	(10K $\Omega$ )	ACN7011
R651	(56K $\Omega$ )	ACN7012
R653	(220 $\Omega$ )	DCN1062
R654	(0 $\Omega$ )	DCN1065

##### OTHERS

CN652	CONNECTOR	12FMZ – AST
CN651	CONNECTOR	173979 – 4
CN653	CONNECTOR	SLEM22R – 2

##### SENSOR BOARD ASSY

##### SEMICONDUCTOR

D652	GP1S24
------	--------

##### OTHERS

J652	3P JUMPER WIRE	D20PWW0315E
------	----------------	-------------

##### MOTOR BOARD ASSY

##### OTHERS

LOADING MOTOR	VXM1034
---------------	---------

### Mark No. Description Parts No.

#### SW BOARD ASSY

##### SWITCHES

S651, S652	VSG1006
------------	---------

##### OTHERS

J656	3P JUMPER WIRE	D20PWW0315E
------	----------------	-------------

#### CD ASSY

##### SEMICONDUCTORS

IC8151	CXA1372Q
IC8301	CXD2508AQ
$\Delta$ IC31	ICP – N10
$\Delta$ IC8201, IC8202	LA6520
$\Delta$ IC12	NJM79L05A

$\Delta$ IC8001	PD4664A
IC11	PQ05RR12
IC8401	XLA4558F – P
Q502	2SA1048
Q8401, Q8402	2SD2144S

Q8301	2SK246
Q8302, Q8403, Q8404	DTA143ES
Q503	DTC143ES
$\Delta$ D11 – D15	11ES2
D8051 – D8056, D8301, D8401 – D8406	ISS254

D16	MTZJ18B
-----	---------

##### COILS

$\Delta$ L8051	LAU010J
$\Delta$ L8301	LAU100J
L8401	LAU100J
L8321	LAU1R2J
$\Delta$ L8001	LAU220J

##### SWITCH

S401	DSG1048
------	---------

Mark No.	Description	Parts No.
<b>CAPACITORS</b>		
	C8322	CCSQCH100D50
	C8006, C8007, C8051, C8055	CCSQCH101J50
	C8350, C8351, C8407 – C8410	CCSQCH101J50
	C8323	CCSQCH220J50
	C8403 – C8406	CCSQCH271J50
	C8401, C8402	CCSQCH391J50
	C8411, C8412	CEANP220M50
	C8004, C8167	CEAS101M10
	C20	CEAS101M35
	C8430	CEAS220M50
	C8423	CEAS221M10
△	C19, C22, C8201, C8202, C8301	CEAS330M16
△	C18	CEAS331M16
	C17	CEAS332M16
	C8165, C8166	CEAS4R7M50
	C8309	CEASR47M50
	C8054, C8162, C8312, C8320, C8321	CKSQYB102K50
	C8001, C8152, C8157, C8158, C8160	CKSQYB103K50
	C8204	CKSQYB103K50
	C51, C52, C8306	CKSQYB152K50
	C8161	CKSQYB332K50
	C8151, C8159	CKSQYB333K50
	C8163	CKSQYB472K50
	C8307	CKSQYB473K50
	C8164	CKSQYB561K50
	C8005, C8168, C8203, C8205 – C8209	CKSQYF103Z50
	C8308	CKSQYF103Z50
	C8008 – C8010, C8315, C8316	CKSQYF104Z25
	C11 – C15, C8153 – C8156	CKSQYF104Z50
	C8302, C8303, C8310, C8420, C8421	CKSQYF104Z50
	C8002, C8003	CKSQYF473Z50
<b>RESISTORS</b>		
	R8501	RD1/4PU102J
	R11, R8012, R8036 – R8038, R805	RD1/4PU103J
	R8470	RD1/4PU103J
	R8323	RD1/4PU105J
	R8217, R8220, R8224	RD1/4PU113J
	R12 – R14	RD1/4PU152J
	R8008, R8009	RD1/4PU221J
	R504	RD1/4PU471J
	R8011, R8024, R8027 – R8030, R8039	RD1/4PU473J
	R8162	RD1/4PU513J
	R8025	RD1/4PU561J
	VR8151, VR8152 (22KΩ, 0.1W)	RCP1084
	Other Resistors	RS1/10S□□□J
<b>OTHERS</b>		
	CN13 22P CONNECTOR	52045 – 2245
	CN12 29P CONNECTOR	52045 – 2945
	X8301 CRYSTAL RESONATOR	ASS7000
	J11 3P JUMPER WIRE	D20PWW0310E
	JA11 JACK	AKB7043






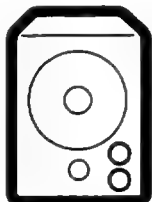

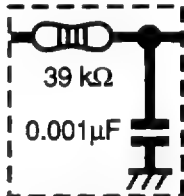
Mark No.	Description	Parts No.
△	TERMINAL	RKC – 061
	JA13, JA14 JACK	RKN1004
	CN8201 TERMINAL	VKN – 004
	KN11, KN13 EARTH METAL FITTING	VNF1084
	X8001 CERAMIC RESONATOR	VSS1014
<b>FRNT ASSY</b>		
<b>SEMICONDUCTORS</b>		
	D103 – D110	ISS254
	D201	SLR – 342VCT31
<b>SWITCHES</b>		
	S101 – S109, S201	ASG1051
	S301	DSG1015
<b>CAPACITOR</b>		
	C201	CKSQYF103Z50
<b>RESISTORS</b>		
	All Resistors	RD1/4PU□□□J
<b>OTHERS</b>		
	CN62 29P CONNECTOR	52044 – 2945
	V101 FL TUBE	AAV7020
	J17 3P JUMPER WIRE	D20PWW0305E
	REMOTE RECEIVER UNIT	GPIU28X
<b>MECHA. PCB ASSY</b>		
<b>SWITCH</b>		
	S610	DSG1016
<b>OTHERS</b>		
	CN610 CONNECTOR	173979 – 4








## 5. ADJUSTMENTS (調整方法)

### 5.1 PREPARATIONS (準備)

#### ■ Jigs and Measuring Instruments (使用測定器/治工具類)

 <p>CD TEST DISC (YEDS-7)</p>	 <p>⊖ Precise screwdriver</p>	 <p>⊖ screwdriver (small)</p>	 <p>⊕ screwdriver (medium)</p>
 <p>⊕ screwdriver (large)</p>	 <p>Low-frequency oscillator</p>	 <p>Dual-trace oscilloscope (10 : 1 probe)</p>	 <p>Low pass filter (39 kΩ + 0.001 μF)</p>

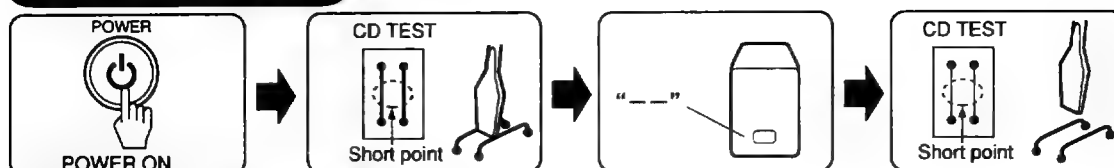
#### ■ Necessary Adjustment Points (調整に必要な項目)

When (このような時)	Adjustment points
Exchange PICKUP (ピックアップを交換した時)	 <div>1.2.3.4.5.6.      Page 27～29</div>
Exchange CD ASSY (CD ASSYを交換した時)	 <div>1.2.3.4.5.6.      Page 27～29</div>
Exchange SERVO MECH ASSY (サーボメカ ASSYを交換した時)	 <div>1.2.3.4.5.6.      Page 27～29</div>
Exchange SPINDLE MOTOR (スピンドルモーターを交換した時)	 <div>            ADJ      Page 11         </div>

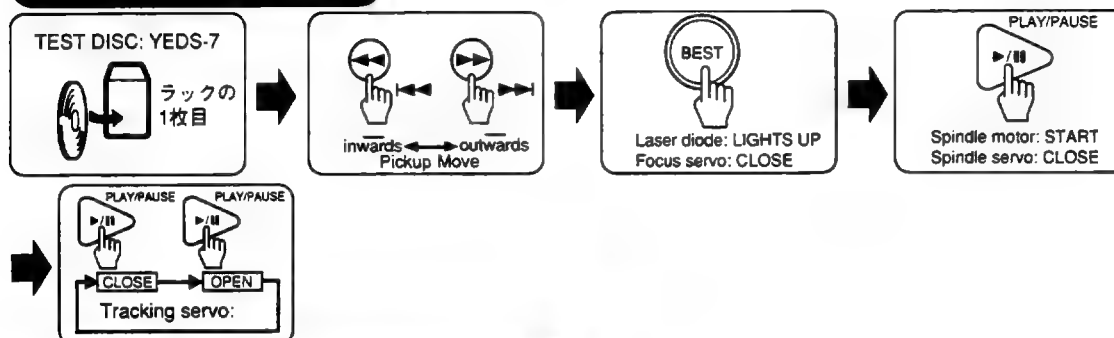
## 5.2 ADJUSTMENT (調整)

### ■ How to Start/Cancel Test Mode (テストモードの設定/解除)

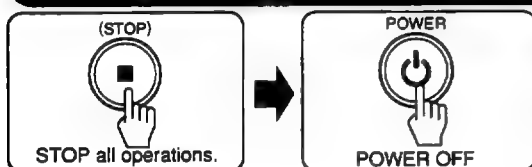
#### TEST MODE: ON



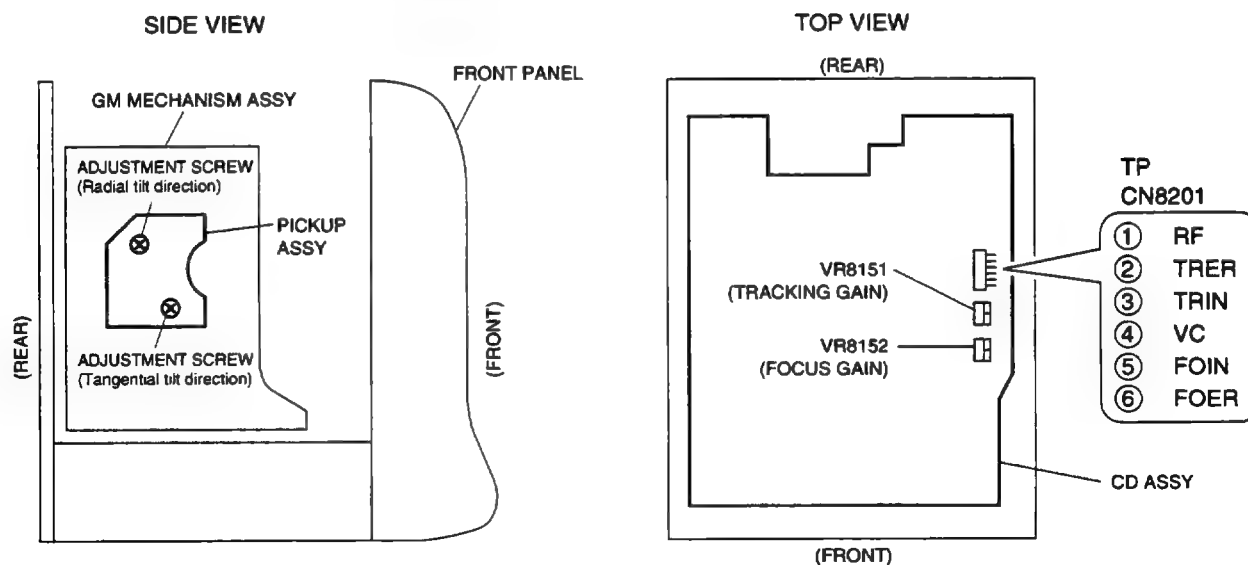
#### TEST MODE: PLAY



#### TEST MODE: STOP → CANCEL



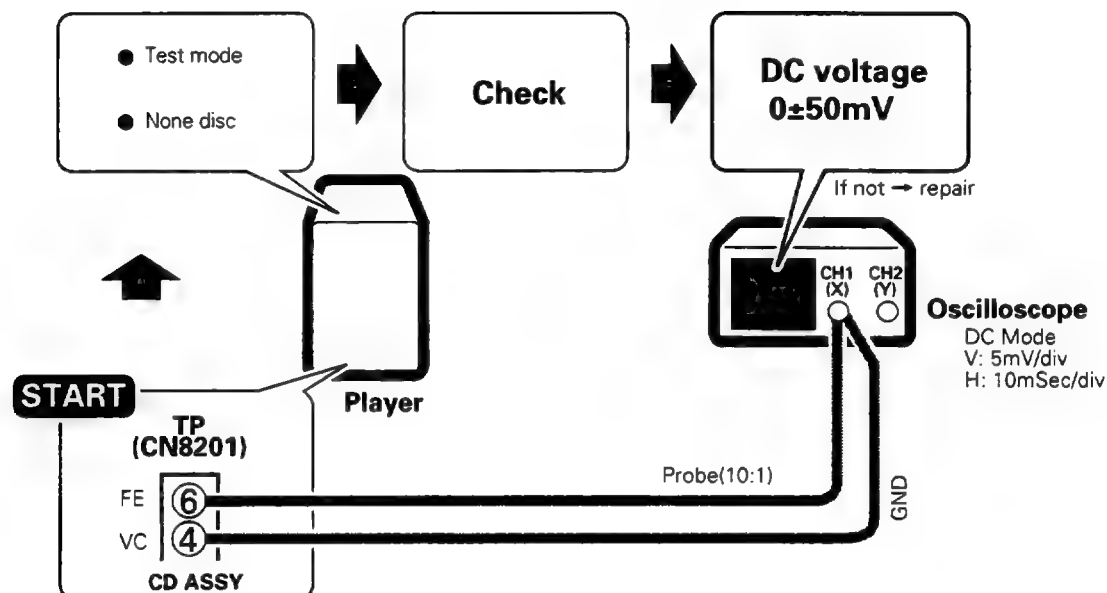
### ■ Adjustment Locations (テストポイントと調整用VRの位置)



## ■ Check and Adjustment (確認、調整)

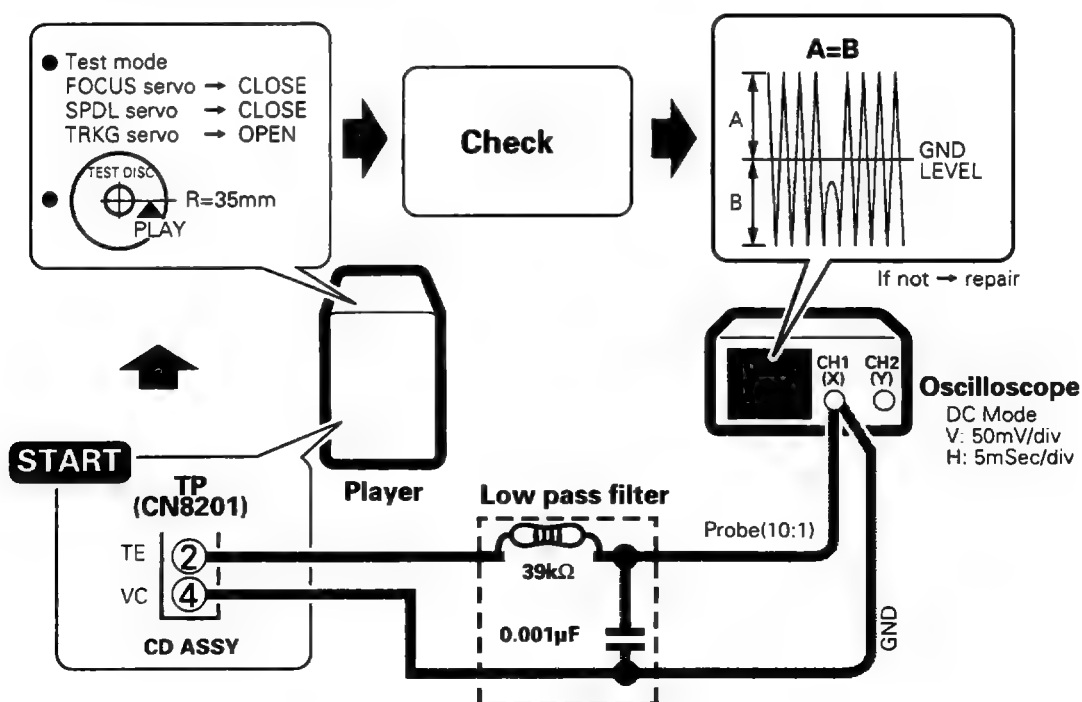
### 1. Focus Offset Check

(フォーカスオフセット確認)



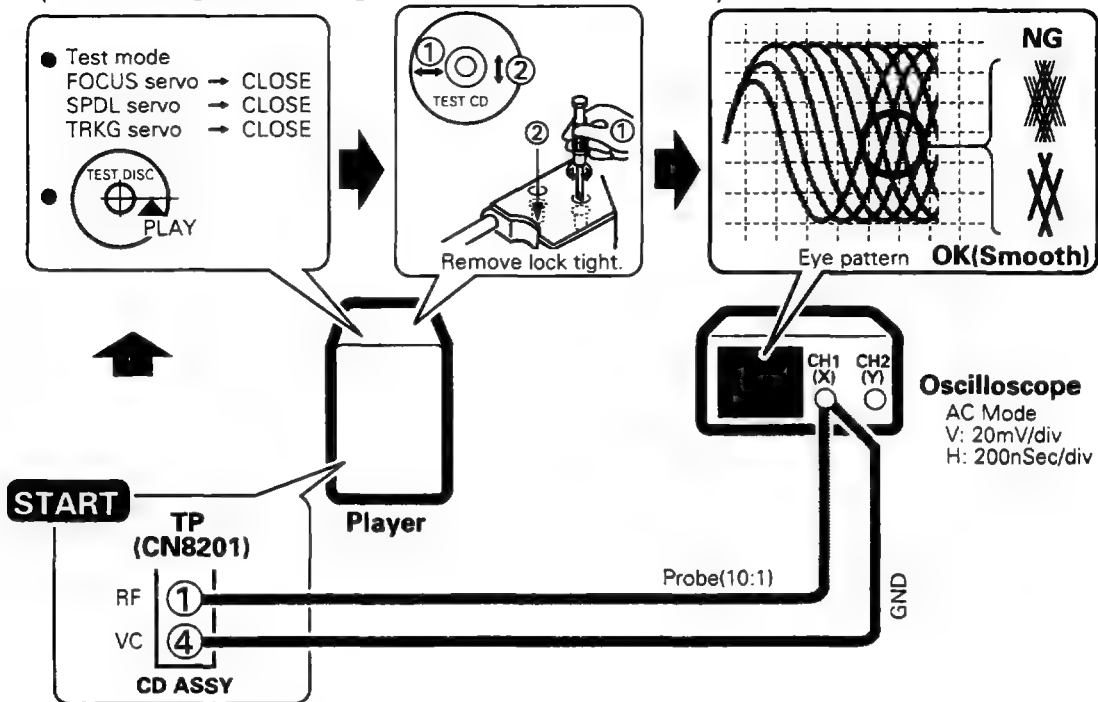
### 2. Tracking Error Balance Check

(トラッキングエラーバランス確認)



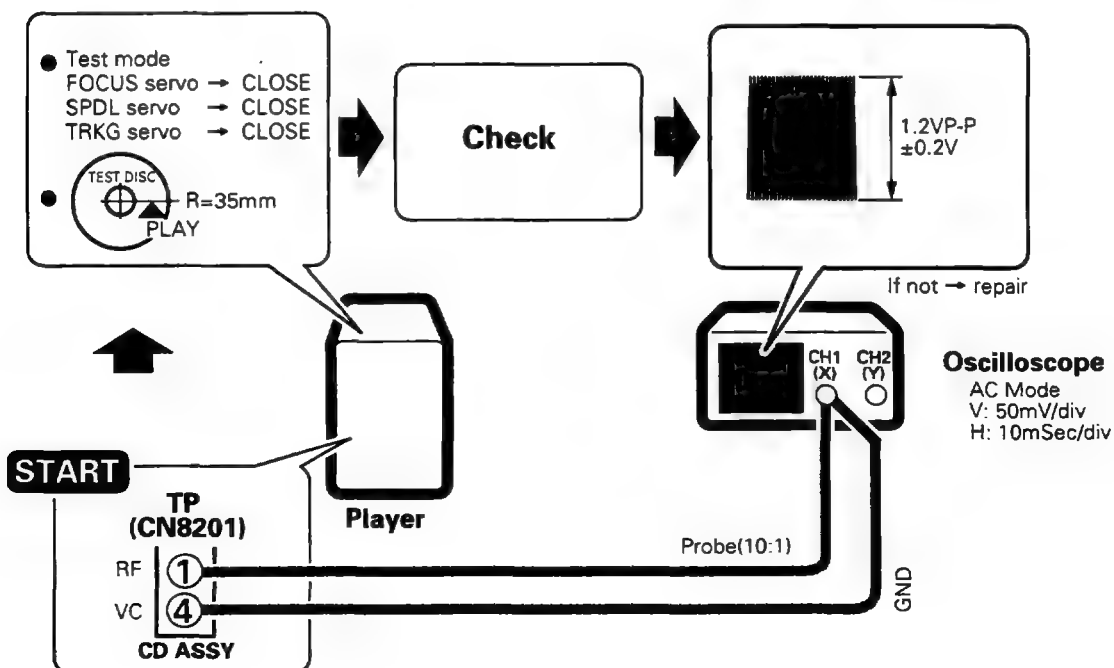
### 3. PICKUP ①RADIAL / ②TANGENTIAL DIRECTION TILT ADJUSTMENT

(ピックアップ①ラジアル方向②タンジェンシャル方向の傾き調整)



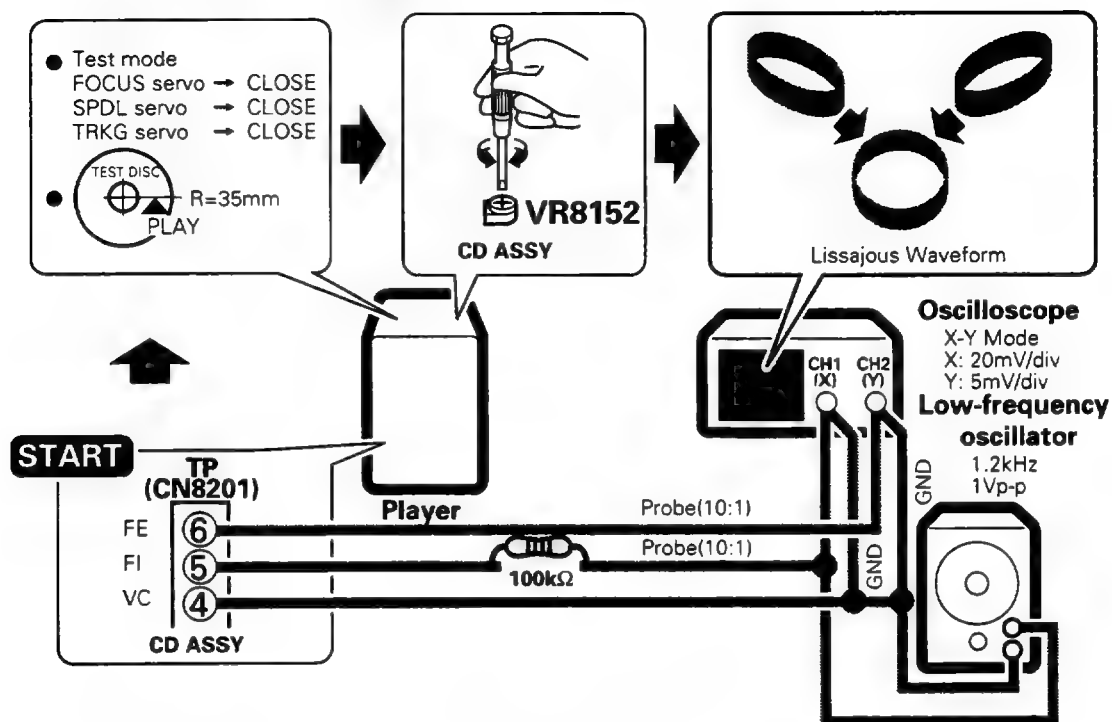
### 4. RF LEVEL CHECK

(RFレベル確認)



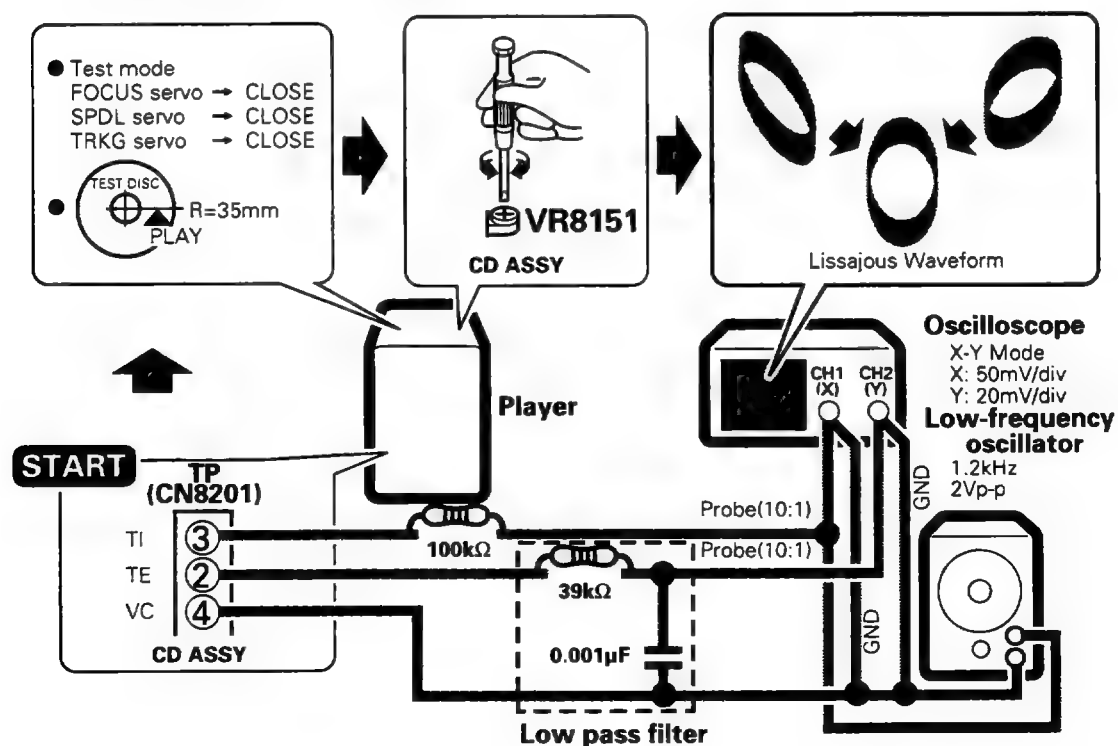
## 5. Focus Servo Loop Gain Adjustment

(フォーカスサーボループゲイン調整)



## 6. Tracking Servo Loop Gain Adjustment

(トラッキングサーボループゲイン調整)

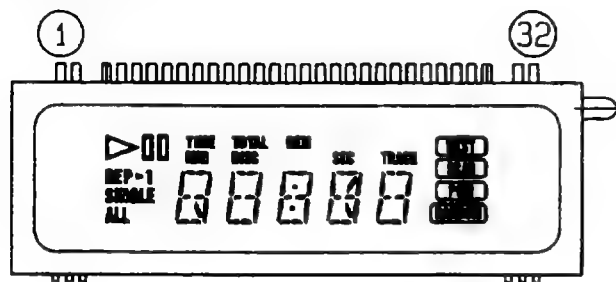


## 6. FL INFORMATION

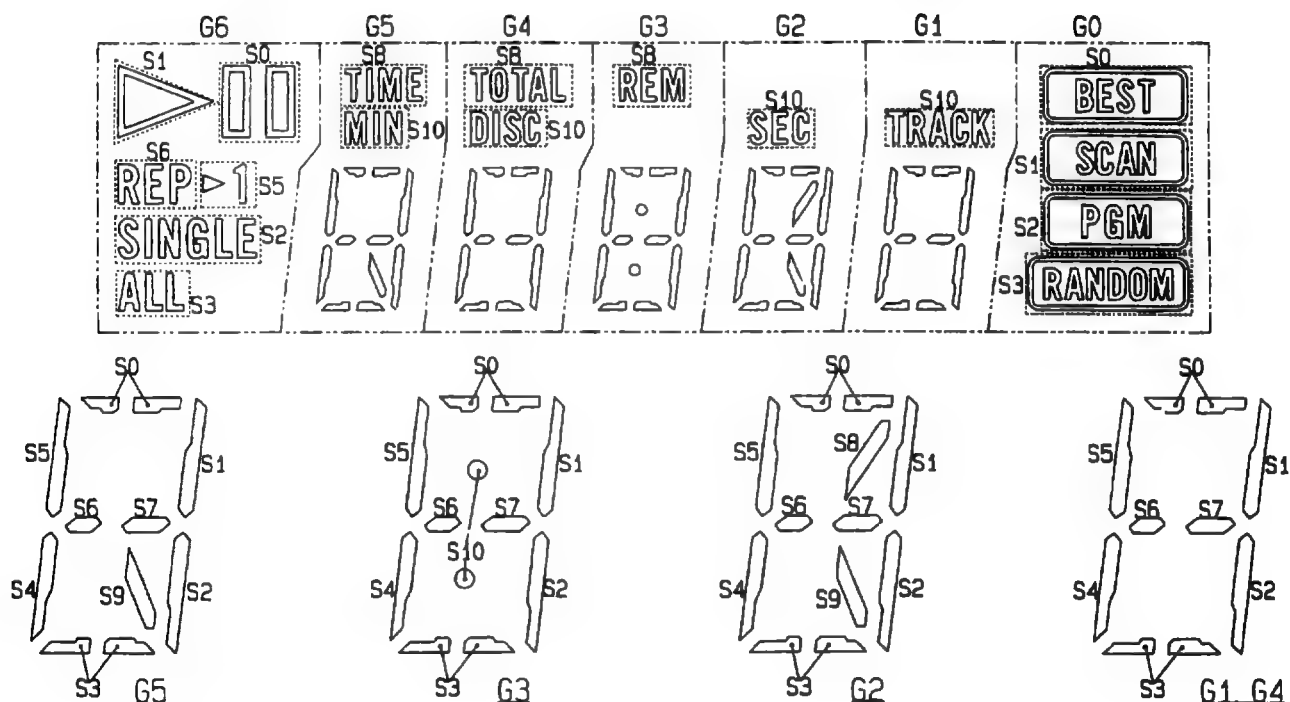
■ AAV7020 (FRNT ASSY : V101)

● FL TUBE

### PIN LOCATION



### ANODE GRID ASSIGNMENT



### PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Assignment	F	F	NP	S9	S4	S3	S2	S7	S6	S5	S1	S0	S8	S10	NL	NL

Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Assignment	NL	NL	NL	NL	NL	NL	G6	G5	G4	G3	G2	G1	G0	NP	F	F

## 7. IC INFORMATION

### ■ PD4664A (CD ASSY : IC8001)

#### ● CD CONTROL IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

#### ● Pin Function

Pin No.	Mark	Pin Name	I/O	Function
1	P94/FIP6	GRID G6	O	FL driving DIGIT output. "L" : Output
2	P93/FIP5	GRID G5	O	
3	P92/FIP4	GRID G4	O	
4	P91/FIP3	GRID G3	O	
5	P90/FIP2	GRID G2	O	
6	P81/FIP1	GRID G1	O	
7	P80/FIP0	GRID G0	O	
8	Vdd	+5V	-	This pin is connected to +5V.
9	P27	DISP CLK	O	Not used.
10	P26	DISP DATA	O	Not used.
11	P25	MUTE	O	Muting output. "H" : MUTE
12	P24	XRST	O	Reset for LSI. "U" : Reset
13	P23	XLAT	O	LSI control data latch pulse. "U" : Latch
14	SCK1	CD CLK	O	LSI serial clock output.
15	SO1	CD DAT	O	LSI control data serial output.
16	SI1	SQSO	I	Subcode Q data serial input.
17	RESET	RST	I	CPU Reset. "U" : Reset
18	P74	LD ON	O	Laser diode ON/OFF output. "L" : ON, "H" : OFF
19	P73	XTAL ON/OFF	O	LSI oscilation control output. "L" : Oscilates, "H" : Stops
20	AVss	GND	-	This pin is connected to ground (GND).
21	P17	CD-G CE	O	Not used.
22	P16	CD-G MUTE	O	Not used.
23	P15	(CD-G RST)	O	Not used.
24	P14	(CD-G NTSC)	O	Not used.
25	P13	SENS	I	LSI operating state multi-mode input.
26	P12	GFS	I	Frame sync lock input. "H" : GFS OK
27	P11	FCOK	I	Focus OK input. "H" : FOCUS OK
28	P10	POWER ON	O	LSI power supply ON/OFF output.
29	AVdd	+5V	-	This pin is connected to +5V.
30	AVref	GND	-	This pin is connected to ground (GND).
31	P04	INSD	I	Slider INSIDE SW input. "L" : INSD SW ON
32	XT2	OPEN	-	Not used.
33	Vss	GND	-	This pin is connected to ground (GND).
34	X1	OSC.	-	Mainsystem clock oscillation (4.19MHz).
35	X2			
36	P37	TEST	I	TEST mode judgment input. "H" : TEST mode
37	P36	DOOR CLOSE	I	RACK SW input. "L" : Closed
38	P35	DOOR OPEN	I	Not used.
39	P34	DSL T	O	Select motor output.
40	P33	DSRT	O	Select motor output.
41	P32	DCNT	I	Disc count pulse input. "H" : Returned to the home positions
42	P31	SB REO/ENA	I/O	System bus communication, request/enable.
43	P30	SB DATA	I/O	System bus communication, data input/output.
44	INTP3	SCOR	I	Subcode sync input. $\bar{L}$ : Subcode sync
45	INTP2	SBCLK	I	System bus communication clock input. $\bar{f}$ $\bar{L}$ : System bus clock
46	INTP1	STBY	I	Not used ( $\bar{L}$ : Microcomputer standby mode off input).
47	INTP0	RMDT	I	Remote control data input. $\bar{L}$ : Remote control data
48	IC(Vpp)	GND	-	This pin is connected to ground (GND).
49	P72	HOME	I	Disc selector home SW input. "L" : Mechanism home position
50	P71	EJECT	I	Loading out SW input. "L" : Ejected

## PD4664A

Pin No.	Mark	Pin Name	I/O	Function
51	P70	CLMP	I	Clamped SW input. "L" : Clamped
52	Vdd	+5V	-	This pin is connected to +5V.
53	P127	PIS3	I	Not used.
54	P126	PIS2	I	
55	P125	PIS1	I	
56	P124	IN1	O	Not used.
57	P123	OUT1	O	Not used.
58	P122	LIN	O	Loading mechanism output.
59	P121	LOUT	O	Loading mechanism output.
60	P120	DOOR IN	O	Not used.
61	P117	DOOR OUT	O	Not used.
62	P116	KD2	I	Key data input. These pins also serve as input pins for model discrimination.
63	P115	KD1	I	
64	P114	KD0	I	
65	P113	(LED RACK)	O	Not used.
66	P112/FIP20	SEG S10	O	FL driving segment output. These pins also serve as SEG output pins for destination.
67	P111/FIP19	SEG S8	O	
68	P110/FIP18	SEG S0	O	
69	P107/FIP17	SEG S1	O	
70	P106/FIP16	SEG S5	O	
71	Vload		-	FLAC
72	P105/FIP15	SEG S6	O	FL driving segment output. These pins also serve as SEG output pins for destination.
73	P104/FIP14	SEG S7	O	
74	P103/FIP13	SEG S2	O	
75	P102/FIP12	SEG S3	O	
76	P101/FIP11	SEG S4	O	
77	P100/FIP10	SEG S9	O	
78	P97/FIP9	LED STBY	O	Standby indicator output. "H" : Lights
79	P96/FIP8	LED RED	O	Selector LED output. "H" : Lights
80	P95/FIP7	LED GR	O	Selector LED output. "H" : Lights

Selector Output and Operation

Pin No.	Pin Name	Stop	(1→25) Rightward	(25→1) Leftward
39	DSLT	L	L	H
40	DSRT	L	H	L

Loading Mechanism Output

Pin No.	Pin Name	Stop	Clamp	Return
58	LIN	L	L	H
59	LOUT	L	H	L

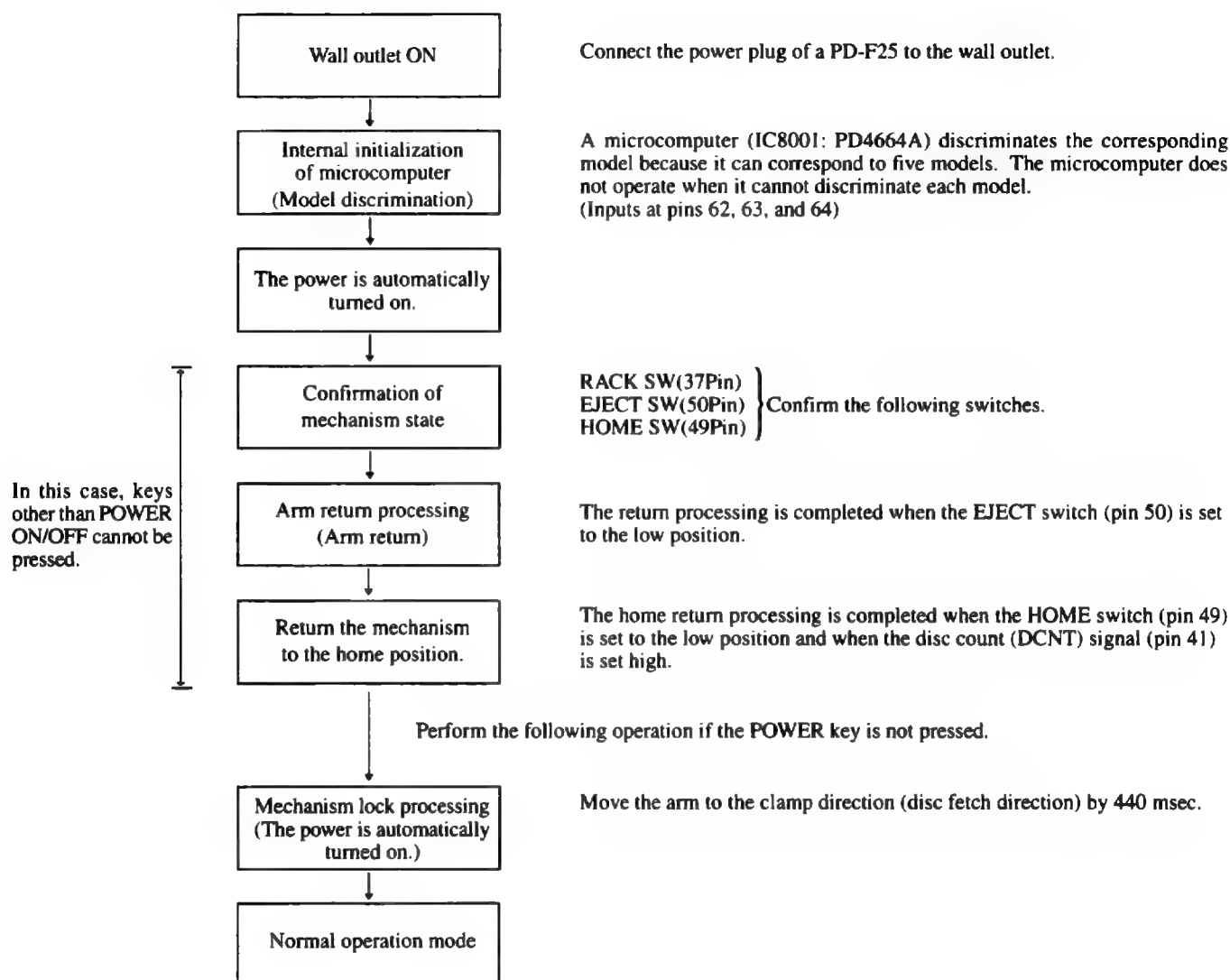
Note : The output contents of this IC vary depending on the selection of model discrimination pins (pins 62 to 64).  
For the function confirmation of PD4664A installed in other products, refer to the Service Manual of the corresponding products.



## 8. OPERATIONAL DESCRIPTION

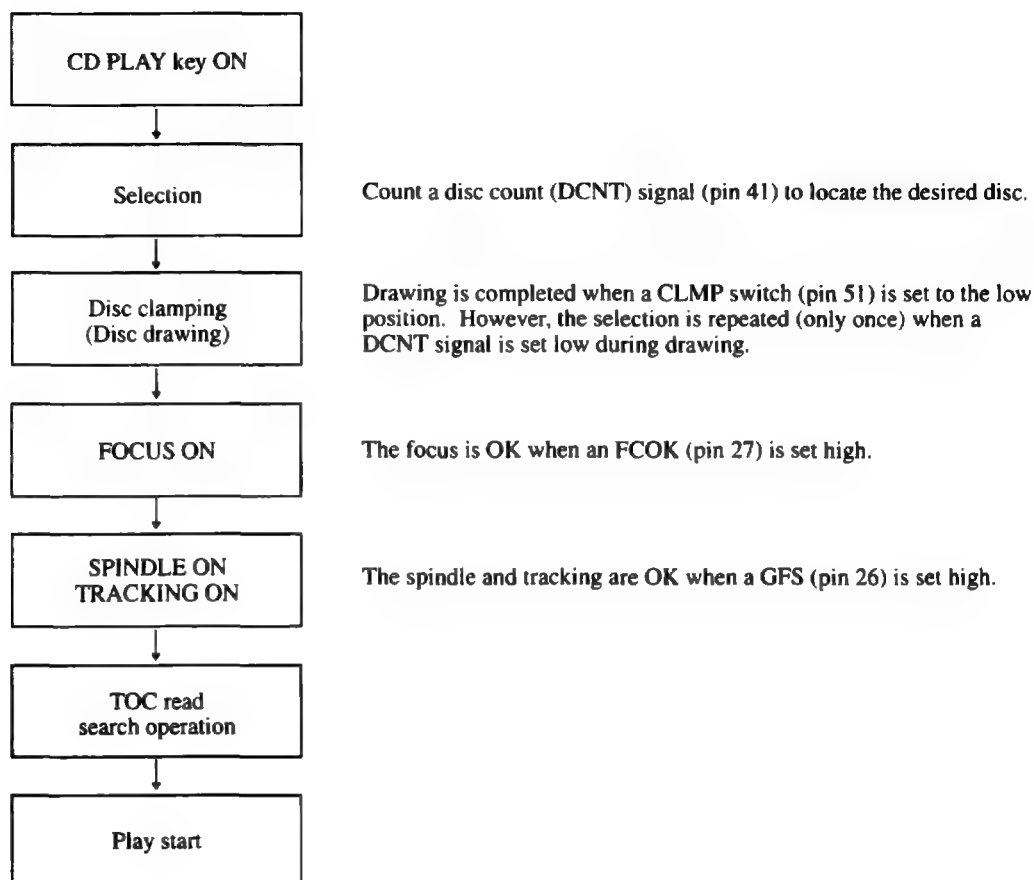
### 8.1 SETUP OPERATION FROM WHEN POWER IS TURNED ON

- If the unit is NG during each operation, the operation is performed again. If the operation is not completed at that time, the unit stops as NG. When the door is opened, the standby state is entered until the door is closed.



## 8.2 OPERATION IN PLAY MODE

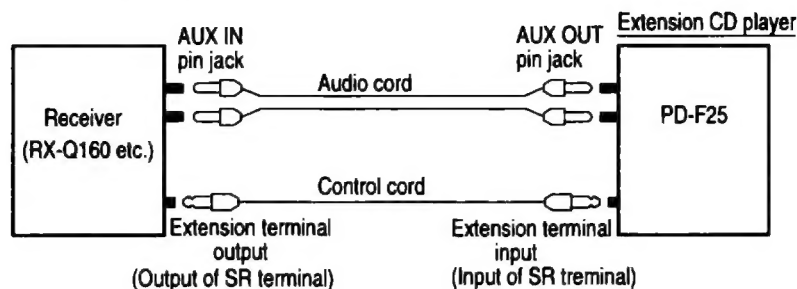
- The operation from when the function switch is set to the CD position and when the mechanism is put in the home position (standby state) is described below.



## 9. NEW FUNCTIONS

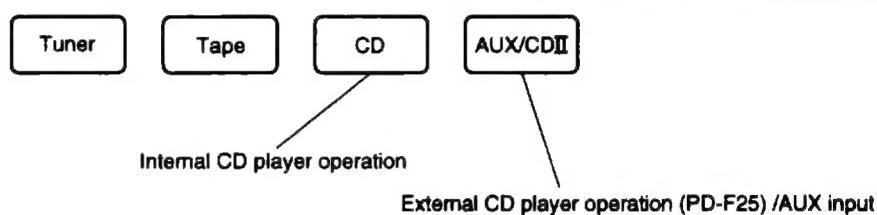
### 9.1 Extension Function <AUX/CDII:FUNCTION>

<Configuration>



<Operation>

An extension CD player operates when the function is set to AUX/CD II. (The function is set to AUX INPUT as before when there is no extension.)



The extension CD player can be also operated using a system remote controller.

#### CAUTION

The extension CD player is restricted in system operation as follows:

- There is no automatic function.
- No ASES
- There is no direction function that uses a remote controller. (Two-action)

### 9.2 BEST COLLECTION MEMORY

<Operation>

The tunes (a maximum of 25 tunes) during play are memorized when the **BEST** button is pressed in the PLAY mode.

The memorized tunes are played back in the order of memory when the **BEST** button is pressed in the stop mode.

<The contents of memory are maintained even if the standby mode is entered.>

### 9.3 PREVIOUS DISC SCAN

<Operation>

The number of a disc (a maximum of 25 tunes) that is usually played back is automatically memorized in time sequence. (The contents of old memory are sequentially cleared when 25 tunes are exceeded.)

(Example: Memory method)

Memory order (= Scan playback order)	1	2	3	4	.....	24	25
disc No.	22	8	9	15	.....	4	1

When the above state is memorized and disc 5 is played back.

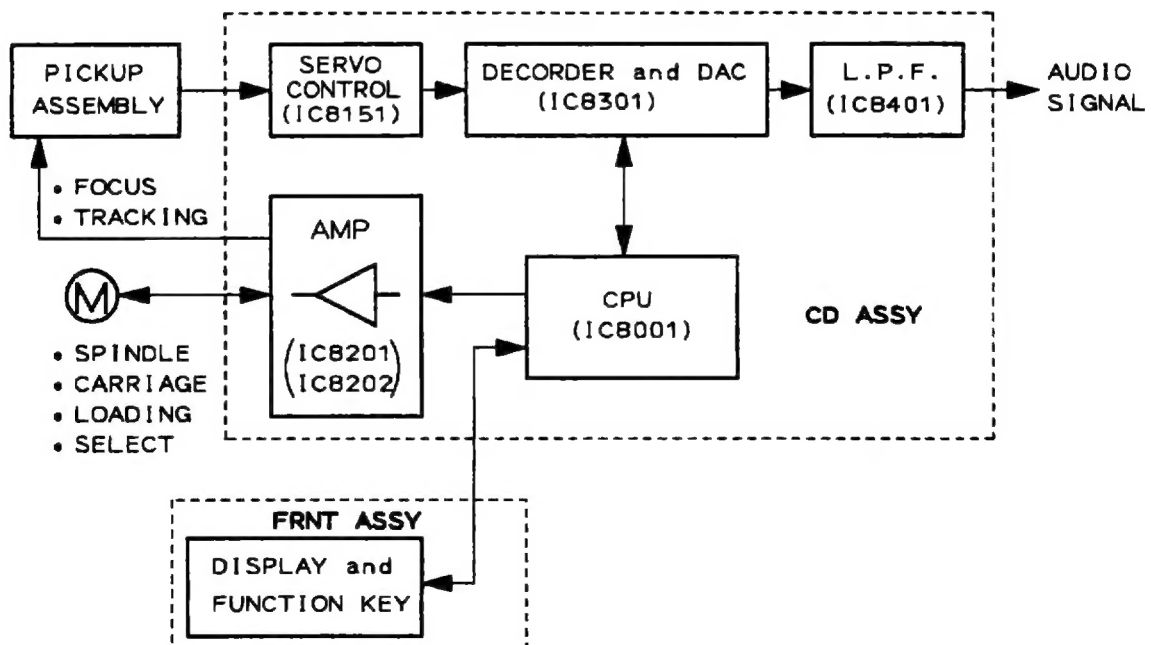
Memory order (= Scan playback order)	1	2	3	4	.....	25
disc No.	5	22	8	9	.....	4

The contents of memory are shifted, and the contents of old memory are sequentially cleared when 25 tunes are exceeded.

Highlight scan operation is performed in the order of newly memorized tune when the **TIME** button is pressed in the stop mode. When the PLAY button is pressed in the scan state, the scan operation stops and the disc is played back.

<The contents of memory are maintained even if the standby mode is entered.>

## 10. BLOCK DIAGRAM



## 11. DISASSEMBLY

### 11.1 FRONT PANEL

- ① Remove the BONNET.
- ② Remove the TENSION ROD.
- ③ Open the HOOD.
- ④ Remove the LINK.
- ⑤ Remove the SCREWS, under both side panels, fixing the FRONT PANEL and SUB CHASSIS.
- ⑥ Remove the FRONT PANEL toward you while removing the HOOK on the side panel.

**Caution :**

- Be careful not to damage the FRONT PANEL by the HOOK on the side panel of the BONNET when installing the BONNET.
- Pull out the power plug from the wall outlet after confirming that the STANDBY indicator lights. (The GM MECHANISM is locked in the home position.)

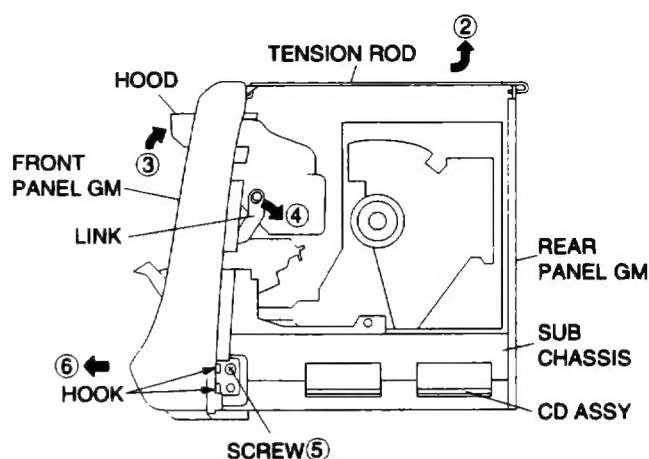


Fig. 1

### 11.2 CD LOADING MECHANISM ASSY

- ① Open the HOOD.
- ② Move the GM MECHANISM to the center position while pushing the LOCK LEVER and LOCK ANGLE in the direction indicated by the arrow (release the home lock).
- ③ Remove the SCREW of the SHAFT HOLDER.
- ④ Remove the GM MECHANISM together with GUIDE SHAFT-25.

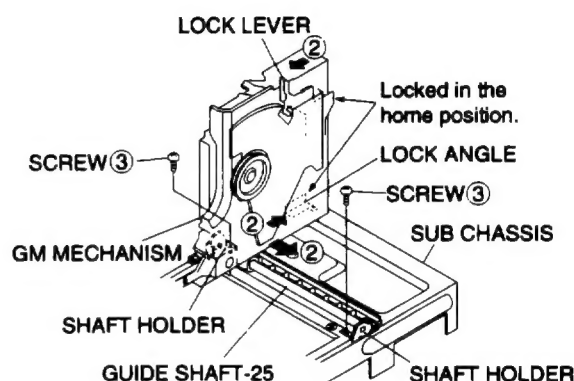


Fig. 2

### 11.3 BOARD DIAGNOSIS

- ① Remove the FRONT PANEL.
- ② Disconnect a FLEXIBLE CABLE 22P from the FLEXIBLE GUIDE.
- ③ Remove the two SCREWS (SUB CHASSIS fixing SCREWS) on the REAR PANEL.
- ④ Remove the GM MECHANISM together with the SUB CHASSIS, rotate the GM MECHANISM reversely in front and in the rear, and put it on the left of the product.

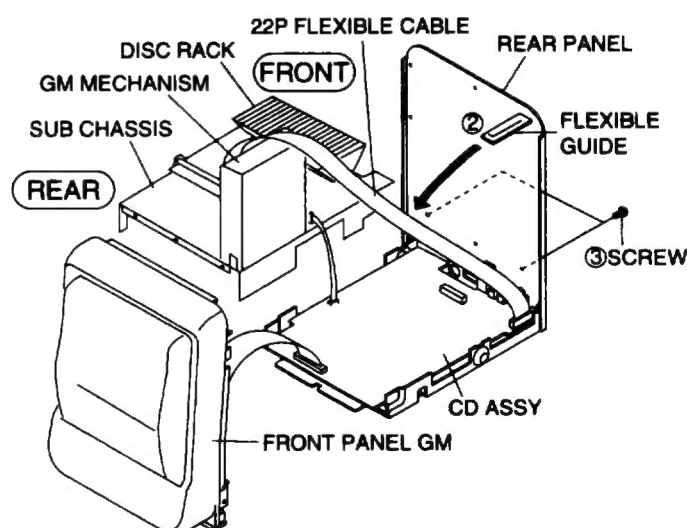
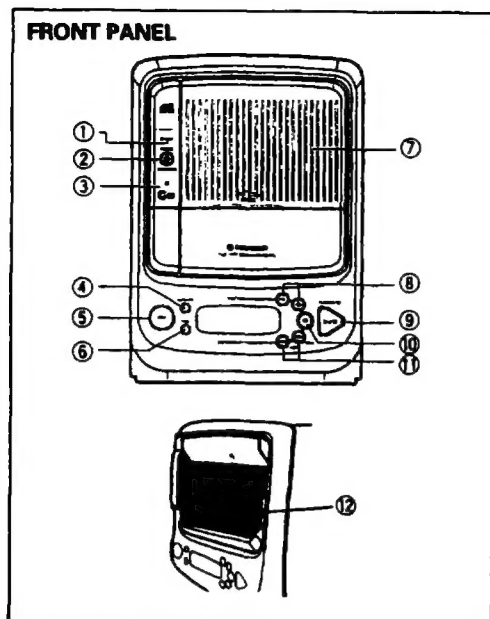
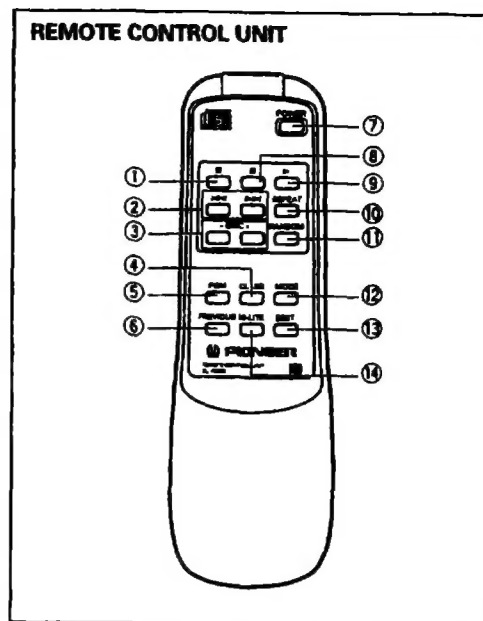


Fig. 3

## 12. PANEL FACILITES



- ① **STANDBY indicator**
- ② **POWER STANDBY/ON switch**
- ③ **Remote sensor**
- ④ **RANDOM button**
- ⑤ **BEST button**
- ⑥ **TIME button**
- ⑦ **Hood**  
The rack ⑫ comes forward when the hood is opened.
- ⑧ **DISC select buttons (+, -)**
- ⑨ **PLAY/PAUSE button (▶/⏸)**
- ⑩ **Stop button (■)**
- ⑪ **Track/Manual search buttons (◀◀/◀, ▶▶ / ▶▶▶)**
- ⑫ **Rack**



- ① **Stop button (■)**
- ② **Track search buttons (◀◀/▶▶)**
- ③ **DISC select buttons (+, -)**
- ④ **CLEAR button**
- ⑤ **Program button (PGM)**
- ⑥ **PREVIOUS button**
- ⑦ **POWER buttons**
- ⑧ **Pause button (||)**
- ⑨ **Play button (▶)**
- ⑩ **REPEAT button**
- ⑪ **RANDOM button**
- ⑫ **MODE button**
- ⑬ **BEST button**
- ⑭ **HI-LITE button**

## 13. SPECIFICATIONS

## 1. General

**Type**..... Compact disc digital audio system

### Power requirements

**US model** .....AC120V, 60Hz

UK model ..... AC220-230V, 50/60Hz

**Power consumption** ..... 12 W

Operating temperature..... +5°C - +35°C

(+41°F - +95°F)

**Weight** ..... 3.2 kg (7lb 9oz.)

**External dimensions .. 180 (W) x 250 (H) x 268 (D) mm**

7-1/16 (W) x 9-13/16 (H) x 10-9/16 (D) in.

## 2. Audio section

Channels ..... 2-channel (stereo)

S/N ratio ..... More than 102 dB (EIAJ)

**Output level** ..... 2Vrms (EIAJ)

### 3. Output terminal

**Audio line output**

**Control input/output**

## Accessories

- Remote control unit ..... 1
- AA/R6P dry cell batteries ..... 2
- Audio connection cable ..... 1
- Control cable ..... 1
- Disc case stand ..... 1
- Operating instructions ..... 1
- Warranty card ..... 1

**NOTE:**

**Specifications and design subject to possible modification without notice due to improvement.**